AutoDome Modular Camera System

VG4-200 | VG4-300 | VG4-500i

BOSCH

en User's Manual

Table of Contents

1 Getting Started

Install and wire the AutoDome according to the Bosch AutoDome Modular Camera System Installation Manual. A typical system includes a keyboard, matrix switcher, monitor, and appropriate wiring connections. Please refer to the individual product manuals for complete installation and setup instructions for each of the system components.

1.1 Powering On

When you turn the AutoDome power on there is a ten (10) second pause before the dome starts its homing phase. During the homing phase the camera pans left and right and tilts up and down. It also adjusts the lens focus. The entire homing phase lasts approximately 40 seconds and ends with a splash screen.

1.2 Establishing AutoDome Control

The most common ways to interface with the AutoDome are:
– Using a keyboard and on-screen display (OSD) menus. This method is the most common and is covered in this manual.
– Using the AutoDome Configuration Tool software running on a PC with Bilinx or the RS-232/485 communication protocol. Refer to the CTFID User Guide for instructions.
– Using a PC-based graphical user interface (GUI) such as the Bosch DiBos 8 software. Refer to the DiBos 8 User Guide for instructions.
– Using the Bosch IP Web interface included with the IP Communications Module.

1.2.1 Basic Keyboard Operation

The following tables summarize the basic operations for a standard keyboard and the functions available to control an AutoDome camera.

Typical Keyboard Features	Usage
Function Keys	Selects a specific control setting.
Number Keys	Inputs a number from 0 to 9.
Camera Key	Selects a camera number.
Enter Key	Inputs a selection.
Focus Key	Sets the lens focus or makes a menu selection in **OSD** mode.
Iris Key	Sets the lens iris setting or makes a menu selection in **OSD** mode.
Key LEDs	Indicates an active key.
LCD	Displays the current status.
Joystick	Controls a pan/tilt/zoom (PTZ) AutoDome camera.

Table 1.1 Typical Keyboard Functions

Dome Operation	How to control
To Pan Side to Side	Move the joystick left or right.
To Tilt Up and Down	Move the joystick forward and back.
To Zoom In	Twist the joystick clockwise.
To Zoom Out	Twist the joystick counterclockwise.

Table 1.2 Typical Keyboard Controls for an AutoDome Camera

1.2.2   Keyboard Commands

Keyboard control commands are composed of a sequence of three (3) inputs with the following convention: 1) a **Function** key + 2) a **Command** number key(s) + 3) the **Enter** key.

–   Depending on the type of keyboard, the control function keys are labeled:

ON or **AUX ON**

OFF or **AUX OFF**

SET or **SET SHOT**

SHOT or **SHOW SHOT**

> **NOTICE!** The convention used for control key commands in this manual is **ON**, **OFF**, **SET**, and **SHOT**. Refer to your keyboard manual for the key naming conventions.

–   Command numbers range from 1 to 999. See Chapter 6: Keyboard Commands by Number for a complete list of keyboard commands.
–   The **Enter** key can also be labeled with the 8 symbol.

For example, the keyboard command to make the AutoDome pan 360º continuously is:
ON-1-ENTER(press the **ON** key, then press the number **1** key, and then press **ENTER**.)

1.3   Setting the Camera Address

Once the AutoDome power is turned on and homing is complete, you must set the camera address. You may also want to assign a password and customize some of the AutoDome default settings.

> **NOTICE!** You do not need to set a camera address if using Bilinx or Ethernet communication. See the AutoDome Installation Manual to configure an AutoDome for Bilinx or Ethernet operation.

1.3.1   FastAddress

FastAddress is an AutoDome feature that allows you to set or change a camera address using the keyboard and on-screen menus.

There are three (3) **FastAddress** commands:

–   **ON**-**999**-**ENTER**: Displays and programs all cameras without an address in the system.

> **NOTICE!** If a keyboard is set to a camera number that already has an address, that camera also responds to this command.

–   **ON**-**998**-**ENTER**: Displays and programs all cameras with or without an address in the system.
–   **ON**-**997**-**ENTER**: Displays the current address status of all cameras in the system simultaneously.

To set an address for a camera without an address:
1. Select the camera number you want to **FastAddress**. The system displays the camera number on the keyboard and the image on the corresponding monitor.
2. Press **#**-**ENTER** (where **#** is the camera number without an address).
3. Press **ON**-**999**-**ENTER** to invoke an on-screen display of cameras on the system without an address.
4. Follow the on-screen instructions. You receive an on-screen confirmation when the **FastAddress** is complete.

To change or clear an address for a camera with an address:
1. Select the camera number you want to **FastAddress**. The system displays the camera number on the keyboard and the image on the corresponding monitor.
2. Press **#**-**ENTER** (where **#** is the camera number with an address).
3. Press **ON**-**998**-**ENTER** to invoke an on-screen display of all cameras on the system, with or without an address.
4. Follow the on screen instructions. You receive an on-screen confirmation when the **FastAddress** is complete.

NOTICE! **FastAddress** is stored in nonvolatile memory and does not change if the power is turned off or if the default settings are restored.

1.4   Setting Passwords

Passwords are used to control access to locked command menus. Unlocked commands are available to all users. Passwords are four (4) digits in length.

1.4.1   Special Passwords

Password	Security Level
0000 (default)	Enables security and requires a user to enter the unlock command **OFF**-**90**-**ENTER** before invoking a locked command.
9999	Disables all security and allows all users to access locked commands.

To set or change a password (locked command):
1. Press **OFF**-**90**-**ENTER** to turn off the command lock.
2. Press **SET**-**802**-**ENTER** to access the password menu.
3. Tilt the joystick up or down to choose a number. Tilt the joystick right to move to the next number position.
4. Follow the on-screen instructions and save the password. You receive an on-screen confirmation.

2   On-Screen Display Menu Navigation

The AutoDome is programmed through the on-screen display (OSD) menus. To access the **OSD** menus, you must open the main **Setup Menu**.

Menu items marked with an asterisk (*****) are default settings, unless otherwise noted.

> ⓘ **NOTICE!** After a period of 4.5 minutes of inactivity, a menu times-out and exits without warning. Some unsaved settings in the current menu can be lost.

2.1   Setup Menu

The main **Setup Menu** provides access to all programmable AutoDome settings. It is a locked menu that requires the user to turn off the command lock.

To open the main Setup Menu (locked command):

1.   Press **OFF-90-ENTER** to turn off the command lock.
2.   Press **ON-46-ENTER** to access the **Main Menu**.
3.   Use the joystick to highlight a menu item.
4.   Press **Focus/Iris** to open a menu.
5.   Follow the on-screen instructions.

> ⓘ **NOTICE!** The AutoDome displays only those menus applicable to the AutoDome Series configuration. Use the joystick to navigate through the menu and the **Focus/Iris** keys to make a selection.

```
Setup Menu

Exit...
Camera Setup
Lens Setup
PTZ Setup
Display Setup
Communication Setup
Alarm Setup
Language
Advanced
Diagnostics



Focus / Iris: Select
```

Setup Menu Choices:

Menu	Description
Exit	Exits the menu.
Camera Setup	Accesses adjustable camera settings such as: white balance, gain, sharpness, sync, line lock, backlight, shutter, and night mode.
Lens Setup	Accesses adjustable lens settings such as: focus, iris, zoom speed, and digital zoom.
PTZ Setup	Accesses adjustable pan/tilt/zoom (PTZ) settings such as: Autopan, tours, PTZ speed, inactivity period, AutoPivot, and tilt limits.

Menu	Description
Display Setup	Accesses adjustable display settings such as: OSD, sector blanking, and privacy masking.
Communication Setup	Accesses communication settings such as: AutoBaud and Bilinx.
Alarm Setup	Accesses the alarm settings such as: inputs, outputs, and rules (not available with 200 Series models).
Language	Displays the language.
Advanced	Accesses the advanced features menu including Stabilization, AutoTrack Sensitivity, Camera Height, and Virtual Masking (only available on 500i Series models).
Diagnostics	Displays the status of diagnostic events.

> **(i)** **NOTICE!** To select the **Exit Menu** item from anywhere in the current menu, use the Zoom command.

2.2   Camera Setup Menu

The **Camera Setup Menu** provides access to camera settings that can be changed or customized. Menu items marked with an asterisk (*****) are the default settings.

```
Camera Setup

  Exit...
* White Bal:            EXT ATW
* Gain Control:         AUTO
* Max. Gain Level:      6 (4**)
* Sharpness             12
* Synch Mode:           Internal
* Line Lock Delay:      0
* Backlight Comp:       OFF
* WDR                   OFF
* Shutter Mode:         Auto SensUP
* Shutter:              1/60
* Auto SensUP Max:      15x
* Night Mode:           AUTO
* Night Mode Color:     OFF
* Night Mode Threshold: 55
* Pre-Comp              1
  Restore Defaults...
  * = Factory Setting
  ** = WDR camera only
  Focus / Iris: Select
```

Camera Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.		
White Balance	Maintains proper color reproduction as the color temperature of a scene changes. For example, from daylight to fluorescent lighting.	**Extended ATW**: Adjusts camera color using extended range. **ATW**: Adjusts camera color constantly. **Indoor W.B.**: Optimizes camera color for typical indoor conditions. **Outdoor W.B.**: Optimizes camera color for typical outdoor conditions. **AWB Hold**: Sets the camera's color settings for the current scene.	**Extended ATW**
Gain Control	Electronically brightens darker scenes which may cause graininess in low light scenes.	**Auto or OFF**	**AUTO**
Max. Gain Level	Adjusts the maximum gain level that the gain control adjusts to when set to **AUTO**.	Sliding scale: − (1 to 6) + (1=8db, 2=12db, 3=16db, 4=20db, 5=24db, 6=28db)	**6 (4 for 36X camera)**
Sharpness	Adjusts the sharpness level of the picture.	Sliding scale: − (1 to 16) +	**12**
Synch Mode	Sets the type of synchronization mode for the camera.	**INTERNAL**: Synchronizes camera to an internal crystal. This choice is recommended if there is noise on the power line. **LINE LOCK**: Synchronizes camera to AC power. This choice eliminates picture roll in multi-camera systems.	**INTERNAL**
Line Lock Delay	Optimizes the **LINE LOCK** mode to eliminate picture roll in multiphase power applications.	Sliding scale: − (0º to 359º) +	0º
Backlight Comp	Improves image quality when the background illumination level is high.	**ON or OFF**	**OFF**
WDR	Turns the wide dynamic range feature on or off.	**ON or OFF**	**OFF**
Shutter Mode:	Turns Auto SensUP on or off.	**Auto SensUP or OFF**	**Auto SensUP**

Menu	Description	Sub-menu / Description	Default Setting
Shutter	Adjusts the electronic shutter speed (AES).	Sliding scale: − (60 at extreme left to 1/10000) +	**1/60 sec.** (NTSC) or **1/50 sec.** (PAL)
Auto SensUP Max.	Sets the limit for sensitivity when the shutter speed is set to Auto SensUP.	**15x, 7.5x, 4x, or 2x**	**15x**
Night Mode (Day/Night models only)	Selects night mode (B/W) to enhance lighting in low light scenes.	**ON, OFF, or AUTO**	**AUTO**
Night Mode Color (Day/Night models only)	Determines if color processing remains in effect while in night mode.	**ON or OFF**	**OFF**
Night Mode Threshold (Day/Night models only)	Adjusts the level of light at which the camera automatically switches out of night mode (B/W) operation.	Sliding scale: −(10 to 55)+ (in increments of 5) 10 is earlier, 55 is later	**55**
Pre-Comp (not applicable with IP AutoDome models)	Amplifies the video gain to compensate for long distance cable runs.	Sliding scale: −(1 to 10)+	**1**
Restore Defaults	Restores all default settings for this menu only.		

2.3 Lens Setup

The **Lens Setup Menu** provides access to lens settings that can be changed or customized. Menu items marked with an asterisk (*****) are the default settings.

```
Lens Setup

  Exit...
* Auto Focus:          SPOT
* Auto Iris:           CONSTANT
* Auto Iris Level:     8
* Focus Speed:         2
* Iris Speed:          5
* Max Zoom Speed:      FAST
* Digital Zoom:        ON
  Restore Defaults


  * = Factory Setting
  Focus / Iris: Select
```

Lens Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Auto Focus	Automatically focuses on the subject in the center of the screen.	**CONSTANT**: Auto Focus is always active, even while the camera is moving. **MANUAL**: Auto Focus is inactive; manual focus must be used. **SPOT**: The camera activates Auto Focus after the camera stops movement. Once focused, Auto Focus is inactive until the camera moves again.	**SPOT**
Auto Iris	Automatically adjusts to varying light conditions.	**MANUAL**: Iris must be adjusted manually. **CONSTANT**: Auto Iris is constantly active.	**CONSTANT**
Auto Iris Level	Reduces the camera's iris level for proper exposure.	Sliding scale: − (1 to 15) +	**8**
Focus Speed	Adjusts the manual focus speed.	Sliding scale: − (1 to 8) +	**2**
Iris Speed	Adjusts the manual iris speed.	Sliding scale: − (1 to 10) +	**5**
Max. Zoom Speed	Adjusts the manual zoom speed.	**SLOW, MEDIUM, or FAST**	**FAST**

Menu	Description	Sub-menu / Description	Default Setting
Digital Zoom (not available with 200 Series models)	Enables digital zoom.	**OFF or ON**	**ON**
Restore Defaults	Restores all default settings for this menu.		

2.4   PTZ Setup Menu

The **PTZ Menu** provides access to pan/tilt/zoom settings that can be changed or customized. Menu items marked with an asterisk (*****) are the default settings.

```
    PTZ Setup

    Exit...
*   Autopan:                    30 deg/sec
*   Tour 1 Period:              5 sec
*   Tour 2 Period:              5 sec
*   PTZ Fixed Speed:            4
*   Inactivity:                 OFF
*   Inact. Period               2 min
*   AutoPivot:                  ON
*   AutoDome Orientation        NORMAL
*   Freeze Frame on Preposition ON
    Tilt Up Limit...
    Restore Defaults

    * = Factory Setting
    Focus / Iris: Select
```

PTZ Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.		
AutoPan	Adjusts speed of camera during AutoPan and AutoScan.	Sliding scale: − (1º/sec. to 60º/sec.) +	**30º/sec.**
Tour 1 Period	Changes dwell time between presets during the tour.	Sliding scale: − (3 sec. to 10 min.) +	**5 sec.**
Tour 2 Period (not available with 200 Series models)	Changes dwell time between presets during the tour.	Sliding scale: − (3 sec. to 10 min.) +	**5 sec.**

Menu	Description	Sub-menu / Description	Default Setting
PTZ Fixed Speed	Sets pan and tilt speed when controlled by a fixed speed controller.	Sliding scale: − (1 to 15) +	**4**
Inactivity	Selects the mode that an AutoDome reverts to after the period of inactivity set in the inactivity period.	**Scene 1**: Returns to Preset 1. **Prev Aux**: Returns to previous activity, such as Aux commands 1, 2, 7, 8, 50, or 52. **OFF**: Remains on the current scene indefinitely.	**OFF**
Inactivity Period	Sets the time period of inactivity before the above action occurs.	Sliding scale: − (3 sec. to 10 min.) +	**2 min.**
AutoPivot	Automatically rotates the camera 180º when following a subject traveling directly beneath the camera.	**OFF or ON**	**ON**
AutoDomeOrientation (not available with 18x color camera)	Automatically rotates the video 180º.	**INVERTED or NORMAL**	**NORMAL**
Freeze Frame On Preposition (not available with 18x color camera)	Holds a preposition video frame while moving to another preposition.	**OFF or ON**	**ON**
Tilt Up Limit...	Sets the upper tilt limit of the camera.	Use joystick to move to a scene.	
Restore Defaults	Restores the default setting for this menu only.		

2.5   Display Setup Menu

Provides access to display settings that can be changed or customized. Menu items with an ***** are the default settings.

```
┌─────────────────────────────────────────┐
│                                          │
│   **Display Setup**                      │
│                                          │
│   Exit...                                │
│ * Title OSD:            MOMENTARY        │
│ * Camera OSD:           ON               │
│   Display Adjust:                        │
│   Sector Blanking...                     │
│   Privacy Masking...                     │
│   Restore Defaults                       │
│                                          │
│                                          │
│                                          │
│                                          │
│   * = Factory Setting                    │
│   Focus / Iris: Select                   │
│                                          │
└─────────────────────────────────────────┘
```
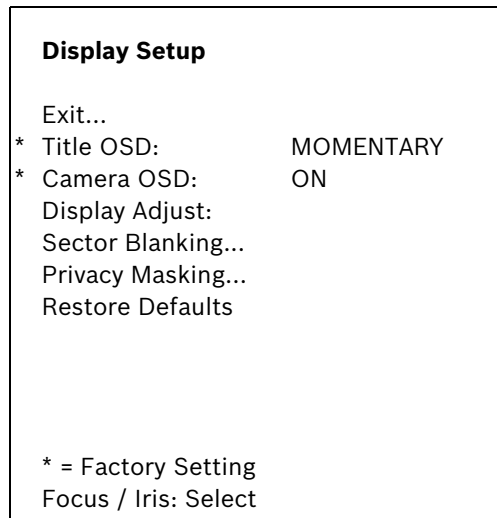
Display Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Title OSD	Controls how the OSD displays sector or shot titles.	**OFF**: Titles are hidden. **ON**: Titles are displayed continuously. **MOMENTARY**: Titles are displayed for a few seconds then disappear from the screen.	**MOMENTARY**
Camera OSD	Controls how the OSD displays camera response information, such as Digital Zoom, Iris open/ close, and Focus near/far.	**OFF or ON**	**ON**
Display Adjust	Adjusts the text brightness and vertical position of the on-screen title.	**Exit**: Exits the menu. **Up**: Moves screen title up. **Down**: Moves screen title down. **Brighter**: Brightens the intensity of the on-screen text. **Darker**: Darkens the intensity of the on-screen text.	
Sector Blanking (not available with 200 Series models)	Allows video blanking of selected sectors. Available sectors are 1 through 16. Follow the on-screen instructions.	**Exit**: Exits the menu. **Sector (1-16)**: Press **Focus/Iris** to blank or clear a sector.	

Menu	Description	Sub-menu / Description	Default Setting
Privacy Masking (not available with 200 Series models)	Allows masking of sensitive areas. Up to 24 privacy masks are available, with a maximum limit of eight (8) to a scene.	**Exit**: Saves and exits menu. **Mask**: 1 to 24 masking areas. Follow the on-screen instructions to set a mask. See *Section 7.4 Privacy Masking (300 and 500i Series Only), Page 47*. **Restore Defaults**: Restores the default settings for this menu only.	
Restore Defaults	Restores the default setting for this menu only.		

2.6   Communication Setup Menu

The **Communication Setup Menu** provides access to baud rate and Bilinx control settings. Menu items marked with an asterisk (*****) are the default settings.

```
┌─────────────────────────────────────┐
│  Communication Setup                 │
│                                      │
│    Exit...                           │
│  * AutoBaud:         ON              │
│  * Baud Rate         9600            │
│  * Bilinx:           ON              │
│    Restore Defaults...               │
│                                      │
│                                      │
│                                      │
│                                      │
│                                      │
│    * = Factory Setting               │
│    Focus / Iris: Select              │
└─────────────────────────────────────┘
```

Communication Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
AutoBaud	Turns AutoBaud detection on.	Toggles **ON or OFF**. **ON** automatically accepts baud rates from 2400 to 57600. (Note: If stepping from 2400 to 57600 baud, you must first set the controller to 19200 for AutoBaud to detect the higher baud rate.)	**ON**
Baud Rate	Manually sets the baud rate when AutoBaud is set to OFF.	Choices are 2400, 4800, 9600, 19200, 38400, and 57600. Then follow the OSD to confirm the selection.	**9600**
Bilinx	Turns on Bilinx control communication. (Only available when not connected to a Bilinx data interface unit.)	Toggles **ON or OFF**.	ON

NOTICE! Bilinx protocol is not available with IP cameras.

2.7 Alarm I/O Setup

The **Alarm Setup Menu** provides access to the **Alarm I/O Setup Menu** to establish the alarm inputs and outputs and to configure alarm rules.

Alarm I/O Setup	**Inputs Setup**	
Exit...	Exit...	
Inputs Setup...	1. Alarm Input 1 N.C.S.	
Outputs Setup...	2. Alarm Input 2 N.O.S.	
Rule Setup...	3. Alarm Input 3 N.O.	1-7
Restore Defaults...	4. Alarm Input 4 N.C.	Physical
	5. Alarm Input 5 N.O.	Inputs
	6. Alarm Input 6 N.C.	
	7. Alarm Input 7 N.O.	
	8. NONE	
	9. NONE	8-12
	10. NONE	Command
	11. NONE	Inputs
	12. NONE	
	Focus / Iris: Select Type	
Focus / Iris: Select	Right / Left: Select Mode	

Alarm Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Inputs Setup	Defines physical inputs or events and commands that can be used in a rule. There are twelve (12) alarm inputs available.		

Menu	Description	Sub-menu / Description	Default Setting
Inputs 1-7	Defines the type of physical input.	**N.O.**: Normally open dry contact. **N.C.**: Normally closed dry contact. **N.C.S.**: Normally closed supervised contact. **N.O.S.**: Normally open supervised contact.	**N.O.**
Inputs 8-12	Defines input commands that can be used in a rule. Command inputs can also be customized by using non-assigned keyboard command numbers.	**NONE**: No command defined. **Aux On**: Responds to a standard or custom keyboard **ON** (1-99) command. **Aux Off**: Responds to a standard or custom keyboard **OFF** (1-99) command. **Shot**: Responds to a Preset shot or scene from 1-99. (200 Series 1-64). **AutoTrack**: Triggers an alarm when set to ON. (Available with 500i Series only). **Motion Detection**: Triggers an alarm when set to **ON.** (Available with 500i Series only).	**NONE**

NOTICE! Alarm inputs 1 and 2 provide tamper detection, if programmed as supervised, for breaks or shorts in an alarm circuit. See the AutoDome Modular Camera System Installation Manual for wiring instructions.

Outputs Setup Menu

```
Outputs Setup...

Exit...
1. Alarm Output 1    N.O.
2. Alarm Output 2    N.O.
3. Alarm Output 3    N.O.
4. Alarm Relay       N.O.
5. NONE
6. Aux On            1
7. Aux Off           8
8. Shot              99
9. OSD
10. Transmit
11. NONE
12. NONE


Focus / Iris: Select Type
Right / Left: Select Mode
```

1-4
Physical
Outputs

5-12
Command
Outputs

Outputs Setup Menu Choices

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Outputs Setup	Defines physical outputs and keyboard commands for use in a rule.		
Outputs 1-3	Defines a physical output.	**N.O.**: Normally open circuit **N.C.**: Normally closed circuit	**N.O.**
Alarm Relay	A fixed output available for use in a rule.		
Outputs 5-12	Defines a command output for use in a rule.	**Aux On**: A keyboard **ON** command. **Aux Off**: A keyboard **OFF** command. **Shot**: Recalls a preset shot. **OSD**: An on screen display. **Transmit**: Transmits a message back to the head end (available with RS-232 serial connections, Bilinx, and IP AutoDome models). **AutoTrack**: Turns AutoTrack on or off as an output. (Available with 500i Series only). **NONE**: No command defined.	**NONE** Outputs 5 and 6 set to **OSD** and **Shot 1**

2.8   Rule Setup Menu

The **Rule Setup Menu** shows the status of the rules and lets you add new rules or modify an existing rule. The default setting is **Empty**.

NOTICE! You can program a total of twelve rules. You must define the inputs and outputs before you program a rule. See *Section 2.7 Alarm I/O Setup, Page 17*, to configure alarm inputs and outputs.

```
Rule Setup...

Exit...
1. Rule 1          Enabled
2. Rule 2          Disabled
3. Rule 3          Invalid
4. Rule 4          Empty
5. Rule 5          Empty
6. Rule 6          Empty
7. Rule 7          Empty
8. Rule 8          Empty
9. Rule 9          Empty
10. Rule 10        Empty
11. Rule 11        Empty
12. Rule 12        Empty



Focus / Iris: Select
```

```
Rule 1

Exit...
Enabled               YES
Input:
Alarm Input 1
NONE
NONE
NONE
Output:
OSD
Shot 2
Alarm Relay           2 sec
NONE


Right / Left: Select Period Time
Focus / Iris: Select Type
```

Rule Setup Menu Choices

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Rule 1-12	Displays the status of a rule on the right side of the menu. There are four (4) possible rule statuses.	**Enabled**: The rule inputs and outputs are properly defined and the rule is turned on. **Disabled**: The rule inputs and outputs are defined but the rule is turned off. **Invalid**: The rule has a missing or invalid input or output. **Empty**: The rule has no inputs or outputs defined.	Empty

Selecting a **Rule** number provides access to its configuration menu. The **Rule # Menu** allows you to configure a rule from previously defined alarm inputs and outputs. Once an alarm is configured with valid inputs and outputs, it can be turned on or off (enabled or disabled) through its configuration menu.

Rule # Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Enabled	Turns the rule on or off after its inputs and outputs have been defined.	**YES** to enable or **NO** to disable	**NO**
Input	Toggles through a list of valid inputs set in the **Alarm I/O Setup > Inputs Setup Menu** that define the rule's inputs. A rule can have up to four (4) inputs.	**Alarm Inputs 1 – 7** and any additional inputs which were set in the **Inputs Setup Menu**, including **Aux On/Off (1-99), Shot, and NONE**.	**NONE**
Output	Toggles through a list of valid outputs set in the **Alarm I/O Setup > Outputs Setup Menu** that defines a rule's outputs.	**Alarm Outputs 1 – 3** and any additional outputs set in the **Outputs Setup Menu** including: **Alarm Relay, Aux On/Off (1-99), Shot, OSD, Transmit, and NONE**. Some outputs, such as **Alarm Outputs 1-3, Alarm Relay, and Aux On/Off** can be set to be active for a specific duration of time as follows: **Seconds**: 1-5, 10, 15, or 30 **Minutes**: 1-5 or 10 **Latched**: The alarm stays active until acknowledged. **Follows**: The alarm follows the alarm rule.	**NONE**

> **NOTICE!** You can include up to four (4) **Input** and **Output** events in a single rule. Each input and output, however, must be true for the alarm's rule to be valid and enabled.

2.9   Language Menu

The **Language Menu** provides access to a list of languages to display the on-screen menus.

```
Language

Exit...
English
Spanish
French
German
Portuguese
Polish
Italian
Dutch



Focus / Iris: Save and Exit
```

Language Menu Choices:

Menu	Description	Default Setting
Exit	Saves and exits the menu.	
Choose a language	Select a language in which the system displays the on-screen menus.	

2.10   Advanced Feature Setup Menu (available with Series 500i only)

The **Advanced Menu** provides access to the **Advanced Features Setup** menus such as image Stabilization, AutoTrack Sensitivity and Virtual Masking. Menu items marked with an asterisk (*****) are the default settings.

```
   Advanced Feature Setup

   Exit...
*  Stabilization              OFF
*  AutoTrack Sensitivity      Auto
   AutoTrack TImeout          OFF
   AutoTrack TImeout Period   5 min
*  Camera Height:             12
   Virtual Masking...
   Restore Defaults...






   Focus / Iris: Save and Exit
```

Advanced Feature Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Stabilization	Turns on video stabilization.		**OFF**
AutoTrack Sensitivity	Sets the sensitivity level of AutoTrack.	Sliding scale: -(Auto, 1 to 20)+ Where **1** is more sensitive and **20** is less sensitive. Auto varies the sensitivity level based on various lighting conditions.	**Auto**
AutoTrack Timeout	Toggles the AutoTrack Timeout feature.	When **On**, AutoTrack "gives up" after the Timeout Period if tracking in a confined area (for example a tree, a flag, etc).	**OFF**
AutoTrack Timeout Period	Enters the AutoTrack Timeout Period set menu	Sliding scale 30 sec, 1 to 30 min.	**5 min**
Camera Height	Defines the height of the camera for AutoTrack.	A range from 2.4 m (8 ft) to 30.7 m (100 ft)	**3.6 m (12 ft)**
Virtual Masking	Enters the **Virtual Mask** menu. See *Section 7.3 Virtual Masking (500i Series Only), Page 47*.	Allows up to 24 virtual masks using five anchor points.	
Restore Defaults	Restores the default settings for this menu.		

2.11   Diagnostics Menu

The Diagnostics menu provides access to a list of diagnostic tools and events.

```
Diagnostics

Exit...
Alarm Status...
BIST...
Internal Temp:          Deg F / Deg C
High Temp Events:       Deg F / Deg C
Highest Temp            Deg F / Deg C
Low Temp Events:        Deg F / Deg C
Lowest Temp:            Deg F / Deg C
Security Access:        0
CTFID Access:           0
Homing Events:          0
Homing Failed:          0
Restart Events:         0
Low Volt Events:        0
Power Up Events:        0
Video Loss Events:      0


Focus / Iris: Save and Exit
```

Diagnostic Events

Menu	Description	Sub-menu / Description
Exit	Saves and exits the menu.	
Alarm Status	Enters the Alarm Status menu and displays the real time status of alarm inputs and outputs.	Alarm Inputs 1 to 7, Alarm Outputs 1 to 3, and Alarm Relay
BIST	Enters the Perform **Built-in Self Tests** menu. If confirmed, the BIST tests start and the results are displayed.	**YES** to start test. **NO** to exit the menu. Typical results displayed as follows: BIST Exit... Data Flash: PASS Bilinx: PASS FPGA: PASS Digital I/O 1: PASS Digital I/O2: PASS VCA: PASS Homing: PASS
Internal Temp.	Displays the current dome temperature.	
High Temp Events	Displays the number of times the high temperature threshold is exceeded.	
Highest Temp	Displays the highest temperature reached.	
Low Temp Events	Displays the number of times the low temperature threshold is exceeded.	
Lowest Temp	Displays the lowest temperature reached.	
Security Access	Displays the number of times the locked-command menu is unlocked.	
CTFID Access	Displays the number of times the Configuration Tool is accessed.	
Homing Events	Displays the number of times the AutoDome was rebooted.	
Homing Failed	Displays the number of times the AutoDome failed to home properly.	
Loss Home Events:	Displays the number of times the AutoDome lost the home position.	
Home Position Good	Displays if the current AutoDome home position is good. Displays YES if good.	

Menu	Description	Sub-menu / Description
Restart Events	Displays the number of restart events.	
Low Volt Events	Displays the number of times the AutoDome dropped below the acceptable voltage limit.	
Power Up Events	Displays the number of power up events.	
Video Loss Events	Displays the number of time that video was lost.	
ExtComm Error Events: (IP comm modules only.)	Displays the number of times that the IP communications module lost internal communication with the System Controller.	

3   Common AutoDome User Commands (unlocked)

This chapter details the commonly used Bosch keyboard setup commands. See
Section 6 Keyboard Commands by Number, Page 37, for a complete list of commands.

3.1   Setting AutoPan Mode

AutoPan mode pans the AutoDome camera 360º or pans between user defined limits (when
programmed). The AutoDome camera continues to pan until stopped by moving the joystick.

To pan 360º:
1.   Press **ON-1-ENTER**.
2.   Move the joystick to stop the pan.

To set left and right pan limits:
1.   Move the camera to the starting position and press **SET-101-ENTER** to set the left limit.
2.   Move the camera to the end position and press **SET-102-ENTER** to set the right limit.

To start AutoPan between limits:
1.   Press **ON-2-ENTER**.
2.   Move the joystick to stop the pan.

3.2   Setting Preset Shots

Preset shots are saved camera positions. Shots are saved as scenes, therefore, the terms
SHOT and **SCENE** are used interchangeably.

To set a Shot:
1.   Move the camera to the position you want to save.
2.   Press **SHOT-#-ENTER** where **#** can be a number from 1 to 99 that identifies the camera
     position of the scene. (shots 1-64 for a 200 Series AutoDome.)

To view a Shot:
▶   Press **SHOT-#-ENTER** where # is the number of the scene position you want to view.

To store or clear a Shot:
1.   Press **SET-100-ENTER** to access the **Store/Clear Scene Menu**.
2.   Follow the on-screen instructions.

3.3   Configuring Preposition Tours

A **Preposition Tour** automatically moves the camera through a series of preset or saved shots.
The 200 Series has one (1) standard preset tour available, while the 300 and the 500i Series
have two (2) standard preset tours and two (2) customized preset tours. Tour 1 is a standard
tour that moves the camera through a series of shots in the sequence they were set. **Tour 2** is
a custom tour that allows you to change the sequence of shots in the tour by inserting and
deleting scenes.

To start Preposition Tour 1: (200, 300, and 500i Series)
1.   Set a series of preset shots in the order that you want the AutoDome to cycle through.
2.   Press **ON-8-ENTER** to start the tour. The tour then cycles through the series of shots until
     it is stopped.

To stop a Preposition Tour:
▶   Press **OFF-8-ENTER** or move the joystick to stop either type of tour.

To add or remove scenes to Preposition Tour 1:
1. Press **SHOT-900-ENTER** to access the **Add/Remove Scenes Menu**.
2. Use the **Focus/Iris** buttons to add or remove the selected scene from the tour.

To start custom Preposition Tour 2: (300 and 500i Series Only)
▶   Press **ON-7-ENTER** to start a tour. The tour cycles through the series of shots in the order they were defined until it is stopped.

To edit a custom Preposition Tour 2:
1. Press **SET-900-ENTER** to access the **Add/Remove Menu**.
2. Press the **Focus/Iris** buttons to add or remove the selected scene.

To change the dwell period of a tour:
1. Press **ON-15-ENTER** to access the **Tour Period Menu**.
2. Select the tour (**Tour 1** or **Tour 2**) and follow the on-screen instructions.

3.4   Programming the Inactivity Operation

You can program the AutoDome to automatically change its operating mode after a period of inactivity.

To access the Inactivity mode (locked command):
1. Press **OFF-90-ENTER** to turn off the command lock.
2. Press **ON-9-ENTER** to access the **Inactivity Mode Menu**.
3. Select one of the following choices:
    –   **Return to Scene 1**: Returns the camera position back to the first scene saved in memory.
    –   **Recall Previous Aux**: Returns the camera to the previous operating mode, such as a **Preposition Tour**.

3.5   Recorded Tours (300 and 500i Series only)

The 300 and 500i Series AutoDome can make up to two (2) recorded tours. A **Recorded Tour** saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds and other lens setting changes.

To Record Tour A:
1. Press **ON-100-ENTER** to start recording a tour.
2. Press **OFF-100-ENTER** to stop recording.

To playback Recorded Tour A:
1. Press **ON-50-ENTER** to begin continuous playback.
2. Press **OFF-50-ENTER** or move the joystick to stop playback

To Record Tour B:
1. Press **ON-101-ENTER** to start recording the tour.
2. Press **OFF-101-ENTER** to stop the tour.

To playback Recorded Tour B:
1. Press **ON-52-ENTER** to begin continuous playback.
2. Press **OFF-52-ENTER** or move the joystick to stop playback.

4   Alternative Control Protocols

The VG4 AutoDome supports three alternative control protocols that allows a user to send commands and to receive information from the AutoDome. The VG4 AutoDome supports the following protocols:

– Pelco-P
– Pelco-D
– American Dynamics Manchester
– Sensormatic RS-422

The VG4 AutoDome natively supports the two Pelco protocols. To use the American Dynamics Manchester or the Sensormatic RS-422 protocol you must purchase a separate module. The module contains instructions to install any additional hardware and information about additional on-screen menus.

4.1   Pelco Protocol Mode

The Pelco Mode features Auto Baud Detection that automatically detects and adjusts the AutoDome protocol and baud rate to match that of the controller. The AutoDome responds to Pelco-D or Pelco-P protocol commands.

NOTICE! The AutoDome supports only the RS-485 protocol while in Pelco mode. It does not transmit responses back to the controller.

4.1.1   Hardware Configuration

The AutoDome is configured from the factory for RS-485 operation in **Pelco Protocol Mode**.

1.   Connect the controller's TX terminals to the AutoDome's TxD terminals. See the AutoDome Modular Camera System Installation Manual for complete wiring instructions.
2.   Pan or tilt the keyboard joystick to confirm that control has been established to the AutoDome (approximately five (5) seconds).

NOTICE! If control is not established, ensure that the RS-232/RS-485 selector switch is positioned to RS-485 (outward toward the LED lights). This switch is located on the bottom of the AutoDome CPU board, under the camera head and next to the LED lights. See *Figure 4.1*.
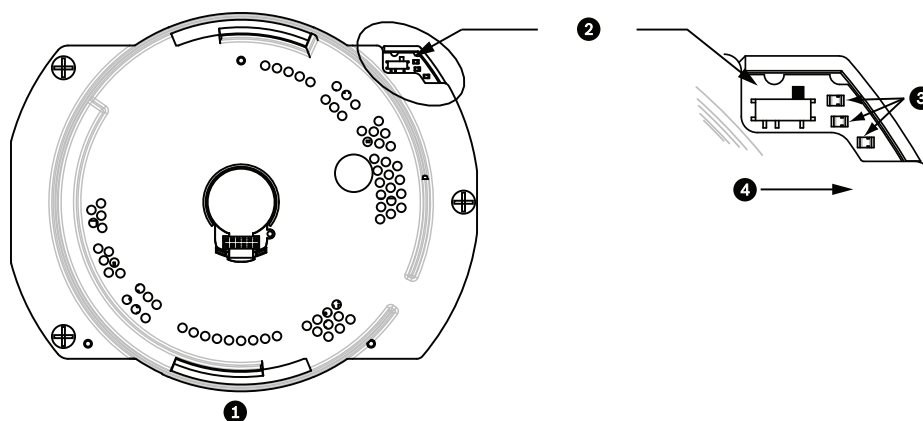
Figure 4.1   RS-232/RS-485 Selection Switch

1	CPU Module
2	Switch Location
3	LEDs
4	RS485

4.1.2   Address Guidelines

– An AutoDome with an address set to 0 responds to commands set to any address.
– **Pelco-P** protocol must use addresses 1 to 32.
– **Pelco-D** protocol must use addresses 1 to 254.

NOTICE! A previously configured AutoDome with an address above 32 (Pelco-P upper limit) or 254 (Pelco-D upper limit) can be used without readdressing the unit. However, no two (2) addresses can be the same. For example:
Pelco-P addresses above 32 are repeated in multiples of 32 (1, 33, 65, 97 are the same).
Pelco-D addresses above 254 are repeated in multiples of 254 (1, 255, 509, 763 are the same).

Setting FastAddress with a Pelco Keyboard

1. Press and hold **95-PRESET** for two seconds to open the Pelco Setup menu.
2. Move the joystick to select the **Command Lock** menu.
3. Press the **FOCUS** or the **IRIS** button to turn Command Lock to **OFF**.
4. Move to the **FastAddress** menu and press the **FOCUS** or the **IRIS** button to open the menu.
5. Use the joystick to enter the unique identifier for the VG4 AutoDome.
   – Move the joystick up or down to select the number.
   – Move the joystick right to move to the next number position.
6. Move the joystick right to select Continue. Then, press the **FOCUS** or the **IRIS** button.
7. Use the keyboard to enter the **FastAddress** number. Then, press the **Camera** button.
   Note: You must first clear an assigned FastAddress number to use the number for a different VG4 AutoDome.
8. Move the joystick down then back up to set the **FastAddress** number.
9. Press the **FOCUS** or the **IRIS** button to store the **FastAddress** number.
   The on-screen display menu confirms that the VG4 AutoDome stored the FastAddress number.

4.1.3   Pelco Keyboard Commands

Pelco control commands are composed of a sequence of two (2) keyboard inputs with the following convention: 1) a **Command Number** and 2) a **Function** key input.
The AutoDome uses the **PRESET** command key to save and recall presets (pre-positions) 1 through 99.

NOTICE! To save a preset, enter the desired number and hold the **PRESET** key for approximately two (2) seconds. To recall a preset, enter the desired preset number (or command) and momentarily press and release the **PRESET** key.

4.1.4   Special Preset Commands

Some **Pelco** mode preset commands have a special meaning and override the normal Pelco preset function as follows:

Preset Command	Description
33-PRESET	Pans the AutoDome 180° (Flip).
34-PRESET	Goes to **Zero Pan** (original home position).
80-PRESET	Toggles the **Synchronization Mode** between Line Lock and Internal (Pelco Frame Scan). This command is available if commands are unlocked using the Main menu.
81-PRESET	Initiates **Preset Tour 1**.
82-PRESET	Initiates **Preset Tour 2**.
92-PRESET	Sets the **Left** pan limit for an AutoScan with **Limit Stops** enabled.
93-PRESET	Sets the **Right** pan limit for an AutoScan with **Limit Stops** enabled.
94-PRESET	Initiates a **Preset Tour**.
95-PRESET	Enables or disables **Limit Stops** in the **Setup Menu** for AutoScan. Invokes the Pelco main **Setup Menu** when pressed for 2 seconds.
96-PRESET	Stops a scan.
97-PRESET	Initiates FastAddress (Pelco Random Scan).
98-PRESET	Toggles the **Synch. Mode** between **Line Lock** and **Internal** (Pelco Frame Scan). This command is available only for two (2) minutes after the power is applied and then reverts to normal preset functionality.
99-PRESET	Starts an AutoScan

NOTICE! Some Pelco controllers do not support all the preset command numbers. Consult the specific Pelco controller's documentation for supported preset commands.

5   Pelco On-Screen Menus

You can program the AutoDome through the Pelco on-screen display (OSD) menus. To access the Pelco menus, you must configure the AutoDome for **Pelco Mode** and invoke the Pelco main **Setup Menu**.

5.1   Setup Menu

The Pelco main **Setup Menu** provides access to the programmable AutoDome settings. Some menu items are locked and require a system password to use. Menu items marked with an ***** are the default settings.

To open the Pelco main Setup Menu (locked commands):
1.   Press **95**-**PRESET** (press the **PRESET** button for approximately 2 seconds to open).
2.   Use the joystick to highlight a menu item.
3.   Press either the **Focus** or the **Iris** key to open a menu item.
4.   Follow the on-screen instructions at the bottom of the screen.

```
Setup Menu

Exit...
Command Lock:          OFF
Bosch Menu
Camera Setup
PTZ Setup
Edit Password
*FastAddress:          Not Set
Advanced
Software Version
Ack and Reset Alarms
Restore All Settings
Reset All Memory
* = Factory Setting
Focus / Iris: Select
```

NOTICE! Use Zoom to select the **Exit** item from anywhere in a menu.

Menu	Description
Exit	**Exits the menu.**
Command Lock (locked)	Allows or prohibits accessing locked commands. (If password is set, you are prompted to enter the password.
Bosch Menu (locked)	Accesses the full AutoDome configuration menu and all AutoDome settings.
Camera Setup	Accesses the White Balance and Night Mode camera settings.
PTZ Setup	Accesses the tours, tour periods, scan speed, edit presets, limit stops, recording, and AutoPivot settings.
Edit Password (locked)	Changes the password.
FastAddress (locked)	Sets or changes a camera address.

Menu	Description
Exit	**Exits the menu.**
Software Version	Displays the current software versions.
Ack and Reset Alarms	Acknowledges and resets active alarms.
Restore All Settings (locked)	Restores all settings to their original default setting.
Reset All Memory (locked)	Clears all settings, including scene shots, tours, and recordings stored in the AutoDome memory.

NOTICE! After a period of 4.5 minutes of inactivity, the OSD menu times-out and exits without warning. Some unsaved settings can be lost!

5.1.1   Command Lock (locked)

The Pelco **Command Lock Menu** allows or prohibits the use of locked commands. The default setting is **ON**.

NOTICE! If the Command Lock is set to **ON** and you press **Focus** or **Iris** on a locked command, the AutoDome displays the on-screen message: "Command is Locked."

5.1.2   Bosch Menu (locked)

The **Bosch Menu** allows full access to the AutoDome main **Setup Menu** and all AutoDome configuration settings.

Pelco menu

```
Setup Menu

Exit...
Command Lock:        OFF
Bosch Menu
Camera Setup
PTZ Setup
Edit Password
*FastAddress:        Not Set
Advanced
Software Version
Ack and Reset Alarms
Restore All Settings
Reset All Memory
* = Factory Setting
Focus / Iris: Select
```

Bosch menu

```
Setup Menu


Exit...
Camera Setup
Lens Setup
PTZ Setup
Display Setup
Communication Setup
Alarm Setup
Language
Advanced
Diagnostics



Focus / Iris: Select
```

Refer to *Section 2: On-Screen Display Menu Navigation* for a complete description of Bosch menus and configuration settings.

Camera Setup (unlocked)

The Pelco **Camera Setup Menu** provides access to camera settings.

```
┌─────────────────────────────────┐
│                                 │
│   Camera Setup                  │
│                                 │
│   Exit...                       │
│ * White Bal:     OUTDOOR        │
│ * Night Mode:    AUTO           │
│                                 │
│                                 │
│                                 │
│                                 │
│                                 │
│                                 │
│                                 │
│   * = Factory Setting           │
│   Focus / Iris: Select          │
│                                 │
└─────────────────────────────────┘
```

Camera Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.		
White Balance	Sets a default value in case the Pelco controller disables the white balance.	**OUTDOOR**: Sets a default setting if the controller disables white balance. **INDOOR**: Sets a default setting if the controller disables white balance.	**OUTDOOR**
Night Mode	Switches from color to monochrome.	**ON**: Sets Night Mode on. **OFF**: Sets Night Mode off. **AUTO**: Sets Night Mode to Auto set.	**ON** (Day/Night models only)

5.1.3   PTZ Setup (unlocked)

The Pelco **PTZ Setup Menu** provides access to the PTZ settings such as tours, scan speed, presets, limit stops, recording, and AutoPivot.

```
┌─────────────────────────────────┐
│                                 │
│   PTZ Setup                     │
│                                 │
│   Exit...                       │
│ * Edit Tour 1...                │
│ * Edit Tour 2...                │
│ * Tour 1 Period:  5 sec         │
│ * Tour 2 Period:  5 sec         │
│ * Scan Speed      30 deg/sec    │
│   Edit Presets...               │
│ * Limit Stops:    OFF           │
│ * Recording:      "A"           │
│ * Autopivot:      ON            │
│                                 │
│   * = Factory Setting           │
│   Focus / Iris: Select          │
│                                 │
└─────────────────────────────────┘
```

PTZ Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.		
Edit Tour 1 (300 and 500i Series)	Accesses the **Add / Remove Scenes On Standard Tour 1 Menu**.	**Exit**: Exits the menu. **Scene (1 - 5)**: Adds or removes scenes from the **Standard Tour**.	
Edit Tour 2 (300 and 500i Series)	Accesses the **Edit Custom Tour Menu**.	**Exit**: Exits the menu. **Scene (1 - 5)**: Adds or removes scenes from the **Custom Tour**.	
Tour 1 Period	Changes the length of waiting time between presets.	Sliding scale: − (3 sec. to 10 min.) +	**5 sec.**
Tour 2 Period	Changes the length of waiting time between presets.	Sliding scale: − (3 sec. to 10 min.) +	**5 sec.**
Scan Speed	Changes the Autopan and AutoScan speeds.	Sliding scale: − (1°/sec to 60°/sec) +	**30°/ sec.**
Edit Presets	Modifies preset scenes.	1-99 scenes	
Limit Stops	Toggles the Limit Stops for AutoScan.	**ON** or **OFF**	**OFF**
Recordings (300 and 500i Series)	Selects record Pattern 1 or 2, if normal pattern command does not respond.	"**A**" or "**B**"	"**A**"
AutoPivot	Follows a subject while beneath the camera, without inverting the picture.	**ON or OFF**	**ON**

5.1.4   Other Menus

Menu	Description	Default Setting
Edit Password (locked, 300 and 500i Series)	Sets or displays the password. See *Section 1.4 Setting Passwords, Page 5*.	
FastAddress (locked)	Sets or changes the AutoDome address.	**Not Set**
Software Version (unlocked)	Displays the camera software version.	
Ack and Reset Alarms (unlocked, 300 and 500i series)	Acknowledges and resets alarms. If there is no active alarm input, the OSD displays the following message: "No Active Alarms."	
Restore All Settings (locked)	Restores all settings to their original factory default settings.	
Reset All Memory (locked)	Restores all settings to their original factory default settings and clears all user programmed settings such as preset scenes and recordings.	

6   Keyboard Commands by Number

Locked	Function Key	Comm No.	Command	Description	Series 200	Series 300	Series 500i
	On/Off	1	Scan 360°	Autopan without limits	✓	✓	✓
	On/Off	2	Autopan	Autopan between limits	✓	✓	✓
✓	On/Off	3	Iris Control	Enters menu (auto, manual)	✓	✓	✓
✓	On/Off	4	Focus Control	Enters menu (spot, auto, manual)	✓	✓	✓
	On/Off	7	Play Custom Pre-position Tour	Activate/Deactivate		✓	✓
	On/Off	8	Play Pre-position Tour	Activate/Deactivate	✓	✓	✓
✓	On/Off	9	Inactivity Mode	Enters menu (Off, Return to Scene 1, Recall Previous PTZ Command)	✓	✓	✓
✓	On/Off	11	Auto Iris Level adjust	Enters Iris Level Adjustment menu	✓	✓	✓
	On/Off	14	Set Autopan and Scan Speed	Enters speed adjustment slide bar	✓	✓	✓
	On/Off	15	Set Pre-position Tour Period (dwell)	Enters dwell adjustment slide bar	✓	✓	✓
✓	On/Off	18	AutoPivot Enable	Enables/disables AutoPivot	✓	✓	✓
	On/Off	20	Backlight Comp	Backlight Compensation	✓	✓	✓
✓	On/Off	23	Electronic Shutter	Enters Shutter Speed slide bar	✓	✓	✓
	On/Off	24	Stabilization	Electronic Stabilization			✓
	On/Off	26	Wide Dynamic Range (WDR camera only)	Activate/Deactivate		✓	✓
✓	On/Off	35	White Balance Mode	Enters White Balance menu	✓	✓	✓
✓	On	40	Restore Camera Settings	Restores all setting to their original defaults	✓	✓	✓
✓	On/Off	41	Line Lock Phase Adjust	Enters delay adjustment slide bar	✓	✓	✓
✓	On/Off	42	Sync Mode	On–Line Lock Off–Internal	✓	✓	✓
✓	On/Off	43	Auto Gain Control	AGC–On, Auto, Off	✓	✓	✓
✓	On/Off	44	Sharpness	Enters Sharpness menu	✓	✓	✓
✓	On	46	Advanced menu	Enters Main Setup menu	✓	✓	✓
	On	47	View Factory Settings	View all menu default settings	✓	✓	✓
	On/Off	50	Playback A, continuous	Activate/Deactivate		✓	✓
	On/Off	51	Playback A, single	Activate/Deactivate		✓	✓
	On/Off	52	Playback B, continuous	Activate/Deactivate		✓	✓
	On/Off	53	Playback B, single	Activate/Deactivate		✓	✓
	On/Off	56	Night Mode menu	On, Off, Auto (Day/Night only)	✓	✓	✓
	On/Off	57	Night Mode setting	Enables/disables Night Mode (Day/Night only)	✓	✓	✓

Locked	Function Key	Comm No.	Command	Description	Series 200	Series 300	Series 500i
✓	On/Off	58	Day/Night Threshold	On–menu (Day/Night only)	✓	✓	✓
✓	On/Off	60	On Screen Display	On–enable Off–disable	✓	✓	✓
✓	On	61	Display Adjust	Adjust On-screen Display	✓	✓	✓
	On	62	Pre-position Title menu	Enters Pre-position Title menu	✓	✓	✓
✓	On	63	Zone Title menu	Enters Zone Title menu	✓	✓	✓
	On	64	Alarm Status	Enters Alarm Status menu		✓	✓
	Off	65	Alarm Acknowledge	Acknowledge alarm or deactivate physical outputs		✓	✓
	On	66	Display software version	Displays software version number	✓	✓	✓
	On	72	Re-initialize camera	Performs camera/lens re-initialization functions	✓	✓	✓
	On/Off	78	AutoTrack	Turns AutoTrack on or off			✓
✓	On	79	Camera Height	Enters the Camera Height menu			✓
✓	On/Off	80	Digital Zoom Lock	Turns digital zoom on and off		✓	✓
	On/Off	81	Physical output 1	On–activates output Off–deactivates output		✓	✓
	On/Off	82	Physical Output 2	On–activates output Off–deactivates output		✓	✓
	On/Off	83	Physical Output 3	On–activates output Off–deactivates output		✓	✓
	On/Off	84	Physical Output 4	On–activates output Off–deactivates output		✓	✓
✓	On/Off	86	Sector Blanking	Enters Sector Blanking menu		✓	✓
✓	On/Off	87	Privacy Masking	Enters Privacy Masking menu		✓	✓
	On/Off	90	Command Lock/Unlock	On–lock on Off–lock off	✓	✓	✓
✓	On/Off	91	Lens Polarity menu	On–reverse Off–normal	✓	✓	✓
✓	On/Off	92	Lens Polarity menu	On–reverse Off–normal	✓	✓	✓
✓	On/Off	93	Lens Polarity menu	On–reverse Off–normal	✓	✓	✓
	On/Off	100	Record A	Activate/Deactivate		✓	✓
	On/Off	101	Record B	Activate/Deactivate		✓	✓
	On	997	FastAddress, display	Display current address	✓	✓	✓
	On	998	FastAddress, all units	Display and program current address	✓	✓	✓
	On	999	FastAddress, unaddressed domes	Display and program unaddressed AutoDomes	✓	✓	✓

Locked	Function Key	Comm No.	Command	Description	Series 200	Series 300	Series 500i
	Set	"1-99"	Pre-position programming	Set ##–programs a preset view	"1-64"	✓	✓
	Shot	"1-99"	Pre-position recall	Shot ##–recall programmed preset	"1-64"	✓	✓
	Set	100	Pre-position menu	Enters the Pre-position menu	✓	✓	✓
	Set/ Shot	101	Autopan left limit	Set–programs left limit Shot–shows limit	✓	✓	✓
	Set/ Shot	102	Autopan right limit	Set–programs right limit Shot–shows limit	✓	✓	✓
	Set	110	Factory P/T home position	Set–recalibrate home position	✓	✓	✓
✓	Set	802	Edit Password	Enters the Edit Password menu		✓	✓
✓	Set	899	Reset ALL	Restores all settings to original defaults and clears all user-programmed settings	✓	✓	✓
	Set	900	Edit Tour 1 (Standard)	Enters the Standard Tour Scene menu		✓	✓
	Shot	900	Edit Tour 2 (Custom)	Enters the Custom Tour Scene menu		✓	✓
	Set/ Shot	901-999	Adds/Removes a preposition shot from Tour 1	Set ###–adds preset Shot ###–removes preset	901-964	✓	✓

7   Advanced Features

This chapter details the advanced features of the AutoDome Modular Camera System.

7.1   Alarm Rules (300 and 500i Series Only)

The 300 and 500i Series AutoDomes feature a powerful alarm rule engine. In its simplest form, an alarm rule defines those inputs that activate specific outputs. In its more complex form, a rule can be programmed to take any combination of inputs and keyboard commands to perform a dome function. There are numerous combinations of alarm inputs and outputs that can be programmed into twelve alarm rules.

Following are three examples for setting up alarm rules. The first example is a basic alarm rule, and the second and third examples are more complex.

Example 1: Basic Alarm Rule

Scenario: We want a door alarm contact to:

1.   Flash an OSD message (***ALARM 1***) on the display when the alarm is triggered.
2.   Move the AutoDome camera to a saved position. (For this example Shot 7.)
3.   Transmit a Bilinx signal over the coax cable to the headend system, such as an Allegiant, to trigger an alarm response.

The sequence to program the above alarm rule example is as follows:

1.   Wire the door contact to Input 1 in the AutoDome. This circuit is normally open.
2.   Define the Alarm Input(s)
     –   From the Inputs Setup menu, ensure that Alarm Input 1 is set to **N.O.** (This is the default setting for Input 1.)

> **NOTICE!** For instruction on wiring alarm and relay connections, see the *AutoDome Modular Camera System Installation Manual*.

3.   Define the Alarm Outputs from the Outputs Setup menu:
     a.   Ensure Output 5 is set to **OSD**. (This is the default setting for Output 5.)
     b.   Set Output 6 to **Shot 7**.
     c.   Set Output 7 to **Transmit** (a Bilinx signal to the head end).
4.   Set up the Alarm Rule (for this example use Rule 1). Select the Inputs from the Rule Setup menu:
     a.   Select **Rule 1**.
     b.   Set the first input to **Alarm Input 1**.
5.   Select the outputs:
     a.   Set the first output to **OSD**.
     b.   Set the second output to **Shot 7**.
     c.   Set the third output to **Transmit**.
6.   Enable the rule:
     –   Highlight Enabled and select **YES**.

Example 2: Advanced Alarm Rule

Scenario: A 500i Series AutoDome located at an airport is set to AutoPan Between Limits from the parking garage to the airport terminal. The gate entering the airport has an alarm contact connected to the AutoDome, and the perimeter fence in the area of the gate has an infrared (IR) motion detection sensor connected to the AutoDome.

When both the gate contact and motion detector alarms are activated at the same time, we want the alarm rule to:

1.   Flash an OSD message (***ALARM 2***) on the monitor.
2.   Stop the AutoPan and move the camera to a saved position (Shot 5) viewing the fence.
3.   Turn on AutoTrack.
4.   Transmit a Bilinx signal to the head end system to trigger an alarm response.

The sequence to program this alarm rule example is as follows:

1.   Wire and set the alarm Input(s).
     a.   Wire the motion detector to Input 1. (This circuit is normally open.)
     b.   Wire the gate alarm contact to Input 5. (This circuit is normally closed.)

NOTICE! For instruction on wiring alarm and relay connections, see the AutoDome Modular Camera System Installation Manual.

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2.   From the Inputs Setup menu:
     a.   Ensure Input 1 (the motion detector) is set to **N.O.** (This setting is the default for Input 1.)
     b.   Ensure Input 5 (the gate contact) is set to **N.C.**
3.   Set the alarm Outputs from the Outputs Setup menu:
     a.   Set Output 5 to **OSD**.
     b.   Set Output 6 to **Transmit**.
     c.   Set Output 7 to **Shot 5**.
     d.   Set Output 8 to **AutoTrack**.
4.   Set up the Alarm Rule (for this example use Rule 2). Select the alarm Inputs:
     a.   From the Rule Setup menu select **Rule 2**.
     b.   Set the first input to **Alarm Input 1**. (The motion detector.)
     c.   Set the second input to **Alarm Input 5**. (The gate alarm contact.)
5.   Select the alarm Outputs:
     a.   Set the first output to **OSD**.
     b.   Set the second output to **Shot 5** viewing the fence.
     c.   Set the third output to **AutoTrack** and select Latched.
     d.   Set the fourth output to **Transmit** (a Bilinx signal to the headend).
6.   Enable the alarm Rule:
     –   Highlight Enabled and select **YES**.

Example 3: Advanced Alarm Rule using AutoTrack

The following example explains how to set an alarm rule that moves the camera to a preset position and then activates the AutoTrack feature to track an intruder after an alarm is triggered. This example uses the Configuration Tool for Imaging Devices (CTFID) software tool. Refer to the *Configuration Tool for Imaging Devices User Guide*, available at www.boschsecurity.com.

1.   Launch the CTFID software from a computer that is connected to a VG4 AutoDome.
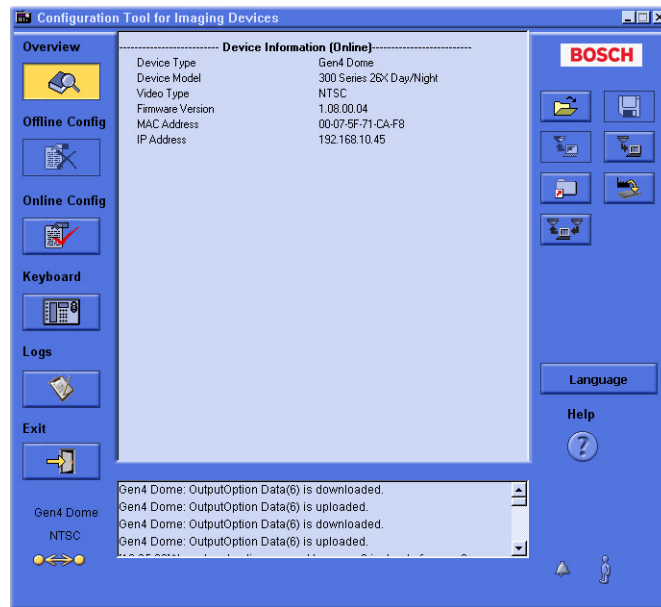
Figure 7.1   CTFID Overview Window

2.   Click the **Online Config** button and then expand **Alarm**.
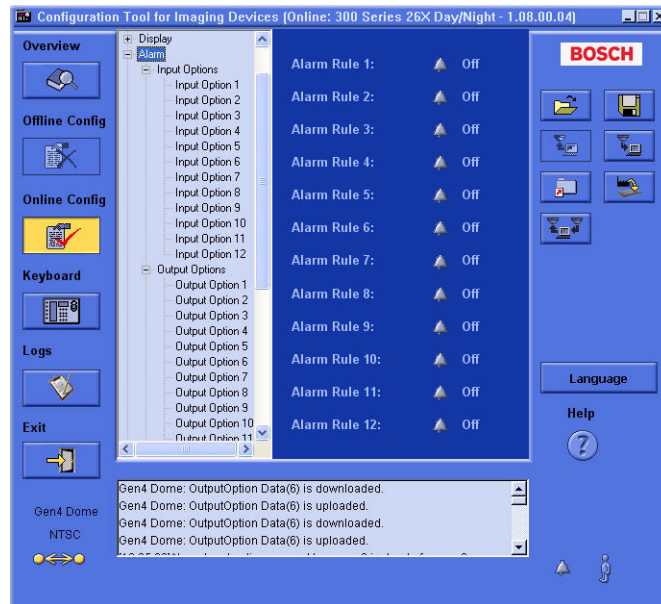
Figure 7.2   Expanded Alarm Group

3.   Expand Output Options; then click **Output Option 5**.
4.   Select **Tracking** from the Type drop-down list.
5.   Click **Output Option 6**.
6.   Select **Shot** from the Type drop-down list.

7. Type the number **1** or use the slide bar to specify shot number **1**. (Shot numbers must be set prior to configuring an alarm rule. See *Section 3.2 Setting Preset Shots, Page 27*, for instructions).
   The AutoDome moves to this preposition when the alarm rule is true.
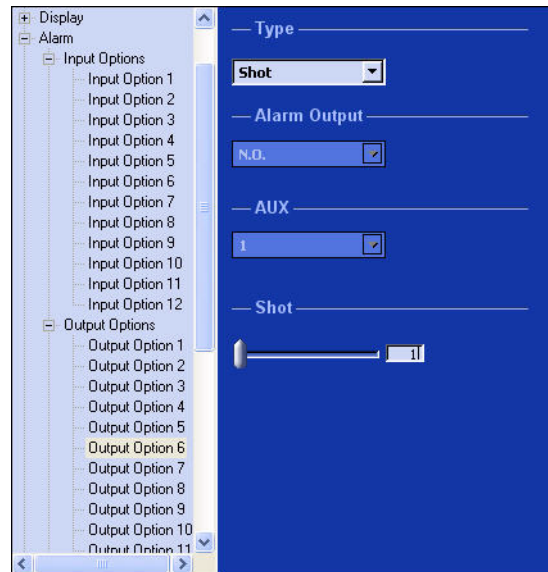
Figure 7.3   Output Option 6 Configuration

8. Expand Alarm Rule; then click **Alarm Rule 1**.
9. Click the **Yes** radio button to enable the rule.
10. Type the number **1** or use the slider bar to select **1** for the Input option.
11. Select **Alarm Input 1** from the Input Option drop-down list.
12. Ensure that the Output number is set to **1**.
13. Select **Shot 1** from the Output Options drop-down list.
    This option instructs the AutoDome to move to pre-position shot 1 when Input 1 is true.
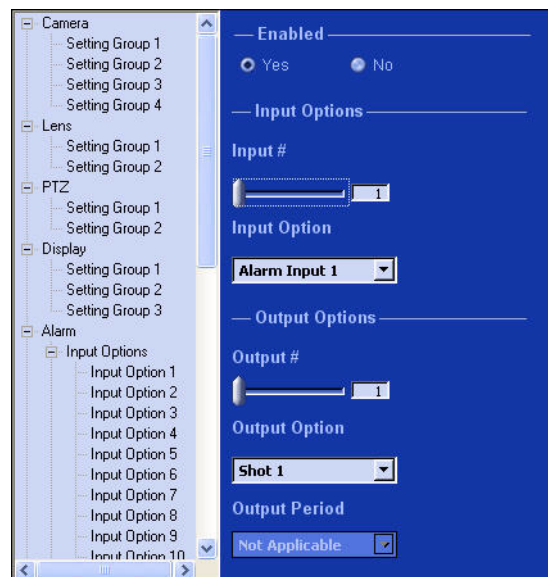
Figure 7.4   Alarm Rule 1 Configuration

14. Move the Output slider bar to **Output 2**.
15. Select **Tracking** from the Output Option drop-down list.
    This option instructs the AutoDome to activate the AutoTrack feature after the input alarm is triggered and after the AutoDome moves to pre-position 1.

16. Select **5 sec** from the Output Period drop-down list.
     This option instructs the AutoDome to turn off the AutoTrack feature after five seconds
     from when the tracked object is out of view.

7.2   AutoTrack Operation (500i Series Only)

The 500i Series AutoDome features enhanced AutoTrack software with more versatility and
smoother object tracking. AutoTrack is now able to continuously follow an individual even if
the person passes behind a Privacy Mask. When used with Virtual Mask, it is able to ignore
predefined areas of background motion.

You can manually start AutoTrack or program the VG4 500i Series AutoDome to automatically
turn on AutoTrack.

– **Manual**
  – Enter the keyboard command **ON-78-ENTER**.
  – In Pelco Mode, open the Main menu, select the Advanced menu, and then select
    AutoTrack On.
– **Automatic**
  – During a pre-position tour.
  – During AutoPan.
  – AutoDome activates AutoTrack after a period of Inactivity (Return to Scene 1 or
    Return to Previous Aux), if AutoTrack is programmed for these activities.

(i) **NOTICE!** For proper operation AutoTrack requires that the camera height be set in the
software. Open the Bosch Main menu, select the Advanced menu and select Camera Height to
enter the height.

7.2.1   AutoTrack Settings and Recommendations

AutoTrack operates by recognizing an individual in motion and zooms-in to approximately 50%
of the field of view for an average target height of six feet. In addition to the camera height,
other factors may interfere with AutoTrack operation.

Setting the Camera Height

To ensure smooth tracking set the Camera Height accurately. Bosch recommends a minimum
camera height of 3.6 m (12 ft).

1. Press **OFF-90-ENTER** to turn off the command lock.
2. Press **ON-46-ENTER** to access the **Main** Menu.
3. Use the joystick to highlight the **Advanced** menu.
4. Press **Focus/Iris** to open the menu.
5. Highlight the **Camera Height** option and press the **Focus/Iris** button.
6. Enter a value between 3.6 m (12 ft) and 100 m (328.1 ft).
7. Press **Focus/Iris** again to accept the camera height value.
8. Exit the **Advanced** menu; then exit the **Main** menu.

Ensuring Smooth AutoTrack Operation

Factors such as the viewing angle and unwanted motion (from trees, for example) may
interfere with AutoTrack operation. Use the following recommendations to ensure smooth
AutoTrack operation:

- **Mount/Mounting Surface Stability**
    - Mount the camera in the most stable position. Avoid locations affected by vibrations, such as those caused by a roof-top air conditioner. These vibrations may cause complications when the camera zooms-in on a target.
    - Use the pendant arm mount, if possible. This mount option provides the most stability for the camera.
    - Use guy wires to protect against strong winds if using the parapet mount.
- **Field of View**
    - Select a location and viewing angle that allows the flow of people to move across the camera's field of view.
    - Avoid motion that moves directly towards the camera.
    - Avoid locations that attract large numbers of people, such as retail stores or intersections.
- **Unwanted Motion**
    - Use the Virtual Masking feature (see *Section 7.3 Virtual Masking (500i Series Only), Page 47*) to mask unwanted motion from trees or cars.
      Bosch recommends that you draw the virtual mask 10% larger than the object to be masked.
    - Avoid neon lights, flashing lights, night time lights, and reflected light (from a window or mirror, for example). The flickering of these lights can affect the AutoTrack operation. Use a Virtual Mask to hide these type of lights if they cannot be avoided.
    - Check the virtual mask periodically to ensure that it still covers the entire object to be masked. Adjust the mask if necessary.

7.2.2   AutoTrack Optimization

The AutoDome achieves optimum tracking performance when the focal length of the lens during AutoPan is as close to the focal length of the lens during an AutoTrack operation. The ambient light conditions also affect the AutoTrack performance.

Dynamic Light Conditions

The ambient lighting conditions affect AutoTrack performance, especially in outdoor dynamic lighting conditions that change daily or hourly. To optimize the AutoTrack performance under changing light conditions, Bosch recommends that you configure the AutoTrack Sensitivity and the AutoPan speeds.

NOTICE! The VG4 AutoDome Service Pack 1.05 contains upgrades that allow the AutoDome to activate the AutoTrack while in AutoPan mode.

Bosch recommends setting the AutoTrack Sensitivity to Auto and suggests the following AutoPan speed for outdoor conditions:

Camera Focal Length	Maximum Suggested AutoPan Speed (degrees/sec)
Near-field (Wide Angle)	5
Mid-field	2
Far-field (Telephoto)	1

If you need a higher AutoPan speed, set the AutoTrack Sensitivity to a value between 1 and 10 in the Advanced Feature Setup menu.

Setting AutoTrack Optimization Parameters
1. Turn off the command lock (if active):
   – From a keyboard: press **OFF-90-ENTER**.
   – From the Aux Control tab (located on the LivePage view): enter **90-OFF**.
2. Access the Main Menu:
   – From a keyboard: press **ON-46-ENTER**.
   – From the Aux Control tab: enter **46-ON**.
3. Access the Advanced Feature Setup menu.
4. Select the AutoTrack Sensitivity option and change the parameter to **Auto** or to a value between **1–10**.
5. Exit the **AutoTrack Sensitivity** menu. Then, exit the **Advanced Feature Setup** menu.
6. Access the **PTZ Setup** menu.
7. Select the **AutoPan** option and change the parameter to one of the suggested values in the table above.
8. Exit the **AutoPan** menu. Then, exit the **PTZ Setup** menu and finally exit the **Main** menu.

Consistent Light Conditions
You may use higher AutoPan speeds in consistent indoor or outdoor ambient light conditions, but Bosch recommends not exceeding a speed of more than 15 degrees/sec. Then modify the AutoTrack Sensitivity setting to reach the optimal results.

7.3 Virtual Masking (500i Series Only)

Virtual Masking is a unique Bosch technology that allows you to create an "invisible" area that ignores unwanted background motion. These invisible masks are similar to privacy zones, except that the AutoDome AutoTrack and Motion Detection algorithms can see them.
– To configure a Virtual Mask, open the **Main** menu, select the **Advanced** menu, then select **Virtual Masking**. To setup a Virtual Mask follow the on-screen menu instructions.
– In Pelco Mode, open the Main menu, select the Advanced menu, then select Virtual Masking. To setup a Virtual Mask follow the on-screen menu instructions.

7.4 Privacy Masking (300 and 500i Series Only)

Privacy Masking is used to block out a specific area of a scene from being viewed. Mask choices have been expanded to include black, white, or blurred, and can be configured with three, four, or five corners to cover more complex shapes.

NOTICE! Privacy Masking does not hinder AutoTrack from tracking an object.

– To configure a Privacy Mask, open the **Main** menu, select **Display Setup**, and then select **Privacy Mask**. Alternatively, enter the keyboard command **ON-87-ENTER**. To setup a privacy mask, follow the on-screen menu instructions.
– In Pelco Mode open the **Pelco Main** menu, open the **Bosch** menu, select the **Display Setup** menu, and finally select **Privacy Masking**. To setup a privacy mask, follow the on-screen menu instructions

7.5   Motion Detection with Region of Interest (500i Series Only) (Preset positions 90 through 99)

With the 500i Series AutoDome, the motion detection software can be configured to create a Region of Interest within multiple preset positions or scenes. It can take advantage of Virtual Masking to ignore motion in predefined areas. Motion Detection can also be used as an Alarm Rule input.

Preset positions 90 through 99 are reserved for programming motion detection scenes.

NOTICE! Motion Detection always takes precedence over AutoTrack object tracking.

To set up a scene with Motion Detection:

1. Choose an unused Preset position from 90 to 99. For this example use Preset scene 95.
2. Enter the keyboard command **SET-95-ENTER**.
3. Select **YES** at the Apply Motion Detection? prompt. (If NO is selected, the Preset scene does not activate Motion Detection.)
4. Select **YES** at the Apply Region of Interest? prompt. (If NO is selected, the entire scene is used for Motion Detection.)
5. Follow the on-screen menu instructions to construct the shape of the screen area you want to detect motion within.

NOTICE! Up to five (5) anchor points can be used to form the area which you want to detect motion within. Motion Detection is not activated until the Preset scene is recalled. The Motion Detection icon "M" appears in the upper left-hand corner of the display.

7.6   Image Stabilization (500i Series Only)

Image Stabilization becomes increasingly important as zoom ranges are extended. The advanced image stabilization algorithms of the 500i Series eliminate camera shake for exceptional image clarity. Bosch achieves this clarity without reducing camera sensitivity or picture quality.

–   To configure image stabilization, open the **Main** menu, select the **Advanced** menu, and then select **Stabilization** to turn on the feature.
–   In Pelco Mode open the **Main** menu, select the **Advanced** menu, and then select **Stabilization** to turn on the feature.

7.7   Pre-position Tour

The 200 Series AutoDome features one (1) standard preset tour, while the 300 and 500i Series AutoDomes feature two (2) preset tours. Each preset scene is saved for playback later. Tour 1 is a standard tour that only recalls the scenes in the exact sequence they were shot. Scenes can be added or deleted on the tour, but the sequence cannot be changed. To add or remove scenes on Tour 1 enter the keyboard command **SHOT-900-ENTER** and follow the on-screen instructions.

Tour 2 (300 and 500i Series only) is a customizable tour that allows you to rearrange the sequence of scenes on the tour by inserting and deleting scenes. To enter the Edit Tour 2 menu, enter the keyboard command **SET-900-ENTER** and follow the on-screen instructions.

8   Configuring and Using the IP AutoDome

The VG4-200, VG4-300, and VG4-500i Series AutoDomes can be ordered with an optional IP module that allows the AutoDome to transmit PTZ control commands and images over a TCP/IP network. It also allows users to configure the AutoDome camera display settings, camera operating settings, and to configure the network parameters.

The IP AutoDome incorporates a network video server in the IP module. The primary function of the server is to encode video and control data for transmission over a TCP/IP network. With its MPEG-4 encoding, it is ideally suited for IP communication and for remote access to digital video recorders and multiplexers. The use of existing networks means that integration with CCTV systems or local networks can be achieved quickly and easily. Video images from a single camera can be simultaneously received on several receivers.

8.1   Overview of Features

The IP module adds the following functionality to an AutoDome system:

Function	Description
Video Encoding	The camera uses the MPEG-4 compression standard and ensures that the data rate remains low even with high image quality and can also be adapted to local conditions within wide limits.
Dual Streaming	Encodes dual data streams simultaneously according to two individually customized profiles. This feature creates two (2) data streams per camera that can serve different purposes. For example, one (1) data stream for local recording and one (1) data stream optimized for transmission over the Local Area Network (LAN).
Multicast	Enables simultaneous, real-time transmission to multiple receivers. The network must implement the UDP and IGMP V2 protocols as a prerequisite for Multicasting.
Configuration	Allows configuration for all camera settings from a Web browser on the local network (Intranet) or on the Internet. You can also update the firmware, load device configurations, store configuration settings, and copy these settings from one camera to another.
Snapshots	Allows you to take and store individual video frames as JPEG images from the Web browser interface.
Backup	Saves video images as a file on a computer's hard drive from the Web browser interface.
Audio	Switches between Biphase-in to Audio-in (line 2V P-P) microphone.
Record	Allows configuration for the recording options of the IP module. You can record video from the Livepage to a hard drive or you can opt to store up to 8 MB of video on the IP module.

8.2   System Requirements

The IP AutoDome requires specific software and hardware to allow a user to view live images and to configure camera settings over a TCP/IP network. These requirements are:

– A computer with the Microsoft Windows 2000 or XP operating system, network access, and the Microsoft Internet Explorer Web browser version 6.0 or later, or
– A computer with Microsoft Windows 2000 or XP operating system, network access, and reception software such as the Bosch VIDOS software or the Bosch Dibos 8.0, or
– An MPEG-4 compatible hardware decoder from Bosch Security Systems (such as the VIP XD) as a receiver and a connected video monitor.

If you choose to use a computer running Microsoft Internet Explorer or any of the Bosch software, the computer must conform to the following minimum requirements:

– Processor: 1.8 GHz Pentium IV
– RAM: 256 MB
– Video system: 128 MB video memory, 1024x768 display with a minimum of 16-bit color
– Network interface: 100-BaseT
– DirectX 9.0c
– Microsoft Internet Explorer, version 6.0 or higher
– MPEG ActiveX utility (available at www.boschsecurity.us)
– Java Virtual Machine (supplied)
  To download the most recent version of MPEG AciveX go to www.boschsecurity.com, click on your location, then select your country. Next. click on CCTV, then Download Library, Software, CCTV, Camera PTZ, and select MPEG ActiveX x.xx.xxxx under the camera model.

(i)   **NOTICE!** Ensure the graphics card is set to 16-bit or 32-bit color. If you need further assistance, contact your PC system administrator.

8.3   Connecting the IP AutoDome to the PC

1. Install the IP AutoDome according to the instructions in the *AutoDome Modular Camera System Installation Manual*.
2. Connect an Ethernet cable from the IP AutoDome RJ45 connector to a dedicated network switch to bypass the Local Area Network (LAN).
3. Connect the dedicated network switch to the RJ45 connector on the PC (see option A below).

(i)   **NOTICE!** The IP AutoDome can also be connected directly to a PC using an Ethernet crossover cable with RJ45 connectors (see option B below).
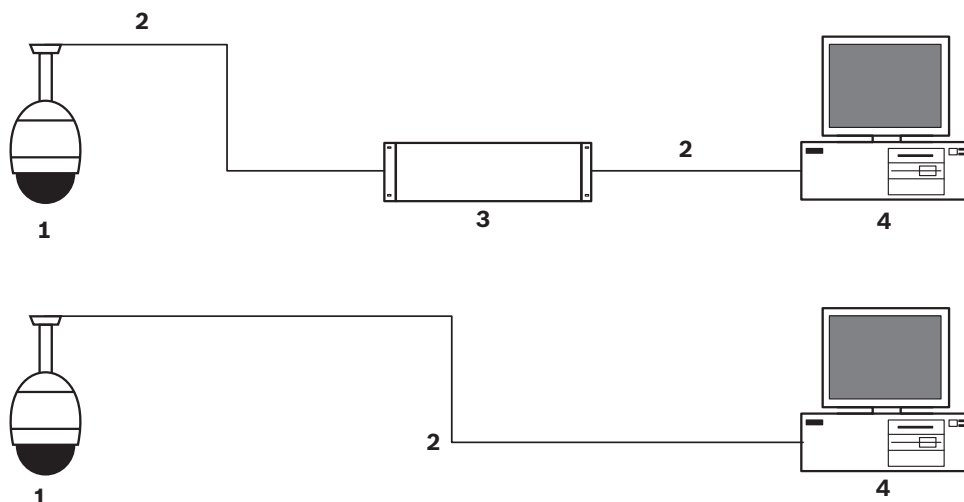
Figure 8.1   IP AutoDome System Configuration

1	AutoDome
2	IP Connection
3	Network Switch
4	Computer

8.4   Configuring the IP AutoDome Camera

To operate the camera in your network you must assign it a valid network IP address. The default IP address is 192.168.0.1, but you may have to change this address if it conflicts with another device on your network.

To properly configure the camera for your network, you need the following information:

– Unit IP address: An identifier for the camera on a TCP/IP network. For example, 140.10.2.110 is a valid syntax for an IP address.
– Subnet mask: A mask used to determine what subnet an IP address belongs to.
– Gateway IP address: A node on a network that serves as an entrance to another network.
– Port: An endpoint to a logical connection in TCP/IP and UDP networks. The port number identifies the use of the port for use through a firewall connection.

> **NOTICE!** Ensure that the network parameters of your cameras are available before you begin configuration.

The IP AutoDome defaults are as follows:

– IP Address: 192.168.0.1
– Subnet Mask: 255.255.255.0
– Gateway IP Address: 0.0.0.0

The following sections provide instructions about installing the software necessary to view images over an IP connection, configuring the IP network settings and accessing the IP AutoDome images from a Web browser.

8.5   Installing the Required Software

To view live video, you must install Bosch MPEG ActiveX, DirectX, and Java Virtual Machine. To view live video from an IP-enabled VG4 AutoDome in Microsoft Internet Explorer or to change VG4 AutoDome configurations, you must install the following software in this order:

1.   Sun Java
2.   Microsoft .NET
3.   Microsoft DirectX
4.   MPEG-ActiveX
5.   Bosch Configuration Manager

You can find the latest versions of the required software on the Bosch Security Systems, Inc. Web site. To locate the software, follow these directions:

1.   Launch a Web browser and navigate to one of the following URLs:
      –   For customers in the United States: http://www.boschsecurity.us
      –   For customers outside of the United States: http://www.boschsecurity.com, then click your region and finally click the link for your country (if available).
2.   Click the **CCTV** or **Products** link (depending on the country Web site) in the left pane of the Web page.

Figure 8.2   Two examples of a country home page (left: United States; right: Spain)

3. Click the **Software** link under the Download Library section in the left pane.

Figure 8.3 Software Link

4. Click **OK** to agree to the Bosch Software License Agreement.
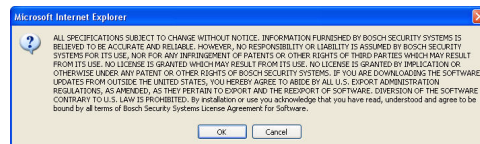
Figure 8.4 Bosch End-user License Agreement

5. Click the **CCTV** link under the Software heading in the center frame.
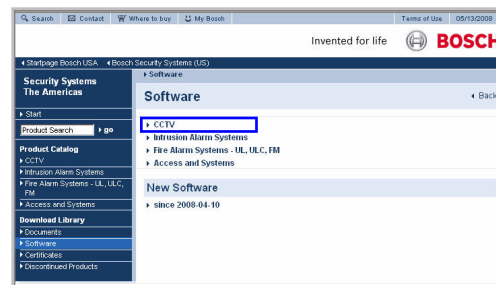
Figure 8.5 Main Software Frame

6. Click the **Cameras, PTZ** link to access the software for Bosch PTZ cameras.
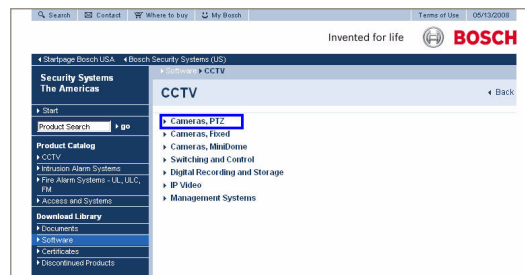
Figure 8.6 Cameras, PTZ link

After you click **Cameras, PTZ** the browser opens the Software Download page for VG4 and VEZ AutoDomes.
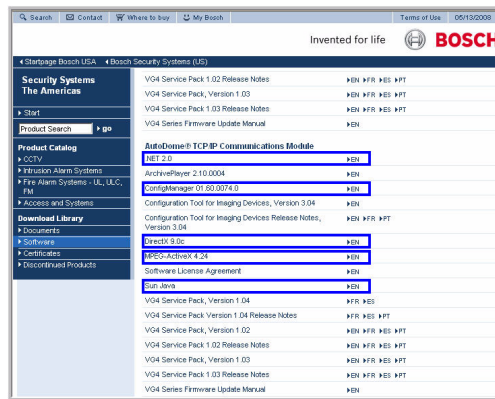
Figure 8.7   Required software highlighted

7.   Scroll down the page to the **AutoDome TCP/IP Communications Module** heading.

8.   Right-click the appropriate language selection and choose **Save Target As** from the pop-up menu for these software packages:

  – Sun Java
  – Microsoft .NET
  – Microsoft DirectX
  – MPEG-ActiveX
  – ConfigManager

9.   Save each software package to the computer that contains the Microsoft Internet Explorer you will use to view the live video images from an IP-enabled VG4 AutoDome. You should now have the following software packages stored on the computer:

  – `MPEG-Active`XXX`_enUS_E3366678923.zip` (MPEG-ActiveX)
  – `DirectX`XXX`_enUS_E2352554507.zip` (DirectX)
  – `dotnetfx_enUS_T5007298827.exe` (.NET)
  – `jre-`XXXX`-windows-i586-p-s_`xxXX`_`XXXXXXXXX`.exe` (Java)
  – `SetupConfigManager`XXXXXXXXX`_enUS_F4155139595.exe` (ConfigManager)

Note: The XXX denotes the software version number. This number changes as updates are made to the software packages.

10. Install the software packages using the procedure below:
    – Unzip the `MPEG-ActiveXXX_enUS_E3366678923.zip` and the
      `DirectXXXX_enUS_E2352554507.zip` files. Ensure that you maintain the directory
      structures for each software package.
    – Double-click the `jre-XXXX-windows-i586-p-s_xxXX_XXXXXXXXX.exe` file to
      initiate the Java installation.
    – Follow the Java Installation Wizard instructions until the software is installed.
    – Double-click `dotnetfx_enUS_T5007298827.exe` to initiate the .NET installation.
    – Follow the .NET Installation Wizard instructions until the software is installed.
    – Open the `DirectXXXX` directory. Then, double-click the `dxsetup.exe` file to initiate
      the DirectX installation.
    – Follow the DirectX Installation Wizard instructions until the software is installed.
    – Double-click `MPEGAx.exe` to initiate the MPEG-ActiveX installation.
    – Follow the MPEG-ActiveX Installation Wizard instructions until the software in
      installed.
    – Double-click `SetupConfigManagerXXXXXXXXX_enUS_F4155139595.exe` to initiate
      the ConfigManager installation.
    – Follow the ConfigManager Installation Wizard instructions until the software is
      installed.
11. Launch Microsoft Internet Explorer and navigate to the URL of an IP-enabled VG4
    AutoDome. Ensure that you can see the live video in the Livepage.
12. Launch the Configuration Manager utility and verify that the IP-enabled VG4 AutoDomes
    in your security system are listed. (You may have to configure some settings in the
    Configuration Manager.)

8.5.1   Changing the Network Settings

The IP Module has a default IP address of 192.168.0.1. To change the IP address or any
network settings, you can use the Configuration Manager software supplied on the CD or the
IP AutoDome Web Server.

> **NOTICE!** Contact your local network administrator for a valid IP address, Subnet Mask, and a
> Gateway IP Address.

Using the Configuration Manager

Configuration Manager is an optional network utility provided on the Bosch Security Systems
Web site (see *Section 8.5 Installing the Required Software, Page 52*). Use the Configuration
Manager Manual provided in the Documentation folder on the CD to make any configuration
changes.

> **NOTICE!** Depending on the PC network security settings, the user may have to add the new IP
> address to the browser's **trusted sites** list for the IP AutoDome controls to operate.

Using the IP AutoDome Web Server

The IP AutoDome incorporates a network video server in the IP module.

To configure the camera using the IP AutoDome Web server, do the following:

1.   Set the IP address on the PC to `192.168.0.10` to ensure that the PC and the IP AutoDome are on the same Subnet.
2.   Launch Microsoft Internet Explorer and navigate to the following URL: http://192.168.0.1
     The Web browser opens the LivePage for the IP AutoDome; a security warning message is displayed.
3.   Check the `Always Trust` box, then click `YES`.
4.   Click the Settings link, located at the top of the LivePage.
5.   Click the Service Settings link, located in the left pane of the Settings window.
6.   Click the Network link to open the Network Settings page.

Figure 8.8   Network Settings Page

7.   Configure the settings on this page based on the addresses provided by your local network administrator.

NOTICE! Click the **Help on this page?** link if you need more information.

8.   Click the Set button to save the settings.
9.   Launch another instance of Microsoft Internet Explorer.
10. Type the original IP address followed by /reset (for example, http://192.168.0.1/reset) in the address bar and click Go to restart the IP AutoDome. Once you restart the IP AutoDome, use the new IP Address to access the LivePage.

11. Disconnect the IP AutoDome Ethernet cable from the dedicated network switch and reconnect the Ethernet cable to the local area network (LAN).

8.6   Main Screen

By default, the IP AutoDome opens the LivePage window when started. The main screen is divided into eleven segments as illustrated below.
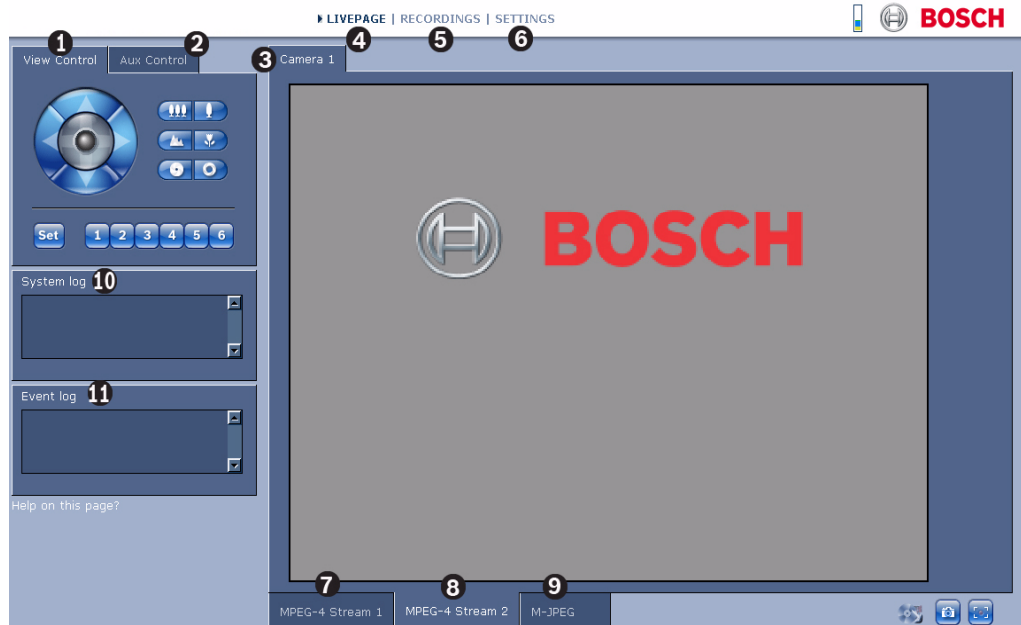
Figure 8.9   IP AutoDome Display Screen

Reference #	Description
1	The View-Control tab enables the user to control the camera (see *Section 8.7.3 Controlling Camera Operations, Page 59*).
2	The Aux Control tab is used to enter pre-programmed keyboard control commands.
3	The Camera 1 tab displays live video.
4	The Livepage enables the user to view live video.
5	The Recordings tab enables the user to view and manage recorded video. (This tab becomes visible only after a recording device is selected on the Settings page.)
6	The Settings tab enables the user to define General, Encoder, Camera, Recording, Alarm, and Service settings.
7	The MPEG-4 Stream 1 tab enables the user to view compressed live video which ensures the data remain low so that local conditions within wide limits can be adapted.
8	The MPEG-4 Stream 2 tab enables the user to view live video.
9	The M-JPEG tab enables the user to view a JPEG picture compression in each frame of video.
10	The System log display box contains information about the connection and operating status of the IP AutoDome (see *Section 8.7.3 Controlling Camera Operations, Page 59*).
11	The Event log display box contains information about alarm connections (see *Section 8.7.3 Controlling Camera Operations, Page 59*).

8.7   Viewing Live Images and Controlling the AutoDome PTZ

Once the network cables are properly connected and the IP AutoDome has a valid IP address, you can view live images and control the PTZ controls over the TCP/IP network using Microsoft Internet Explorer.

8.7.1   Establishing a Connection

Once the software is installed on a local computer and the IP AutoDome is configured with the proper IP addresses, you can connect to the camera using Microsoft Internet Explorer. The main screen contains all the options to configure the LivePage video recording and to configure settings.

Figure 8.10   Overview

To establish a connection, do the following:

1.   Launch Microsoft Internet Explorer.
2.   Type the IP address of the IP AutoDome into the browser's Address Bar and click **Go**.
3.   If the AutoDome is password-protected, the system prompts you to enter a password. Note: This password is for network access only and not for access to the OSD menus.
4.   Type the user name and the associated password in the appropriate fields.
5.   Click **OK** to open the IP AutoDome LivePage. The LivePage window displays the video image from the camera.

NOTICE! The IP AutoDome allows a maximum of five (5) standard connections and 25 multicast connections. If you cannot connect to the IP AutoDome, you may have exceeded the maximum number of connections for the device or network configuration.

8.7.2   Configuring Data Streams

The IP AutoDome encodes dual data streams simultaneously according to two individually customized profiles. This feature creates two (2) data streams per camera that can serve different purposes. For example, one (1) data stream for local recording and one (1) data stream optimized for transmission over the Local Area Network (LAN). In addition, the camera offers a Motion JPEG (M-JPEG) option. M-JPEG is a video format that uses JPEG picture compression in each frame of the video.

Click either the MPEG-4 Stream 1, the MPEG-4 Stream 2 or the M-JPEG tab to switch between the different displays for the camera image (see *Figure 8.11*).
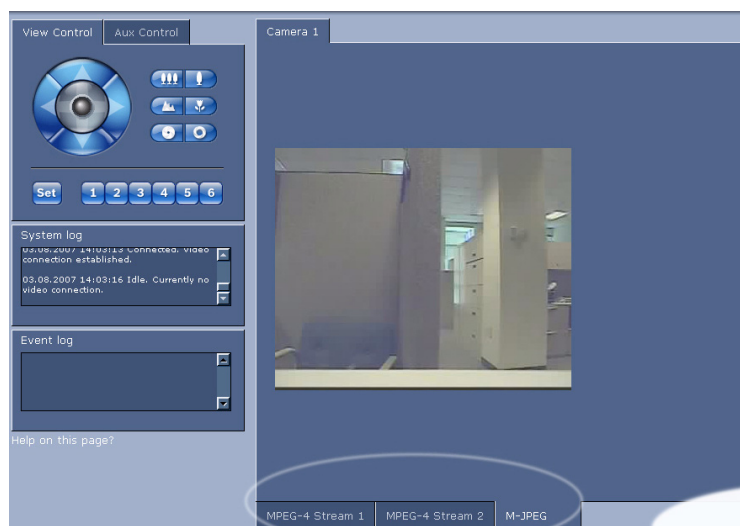
Figure 8.11   Configuring Data Streams

8.7.3   Controlling Camera Operations

The View Control tab and the Aux Control tab allow you to control camera functions (pan, tilt, zoom, focus, and iris), navigate through on-screen menus and to view preset shots.

View Control Tab

The View Control tab enables the user to control the camera in various directions (see *Figure 8.12*).
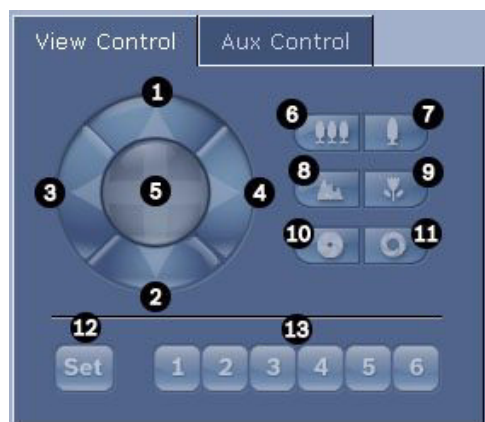
Figure 8.12   View Control Tab

Number	Description	Number	Description
1	Tilts the camera up	8	Focus far[2]
2	Tilts the camera down	9	Focus near[2]
3	Pans the camera to the left	10	Iris close[2]
4	Pans the camera to the right	11	Iris open[2]
5	Pans and tilts the camera in all directions	12	Sets the PTZ speed for controls 1, 2, 3, 4, 5, 6, and 7
6	Zoom out[1]	13	Moves the camera to pre-set shot numbers 1, 2, 3, 4, 5, and 6
7	Zoom in[1]		

1. This function is also accessible by using the mouse scroll wheel while in the Live video frame.

2. This button is also used as the "Enter" button to select menu items from the AUX tab.

To manually pan throughout the image area, move your cursor over any part of the live video. The image area displays a directional arrow (↙↗↖↘↑↓→←), then click and hold the right mouse key to pan the camera.

Digital I/O (300 and 500i Series Only)

The alarm relay outputs will display next to the camera image on the LivePage window when the IP AutoDome is configured to Show Relay Outputs under Service Settings on the Settings window. The relays on the camera allows you to operate a device (for example a light or a door opener). To operate, click the relay symbol next to the video image, only if alarms are not active. The symbol is yellow when the relay is activated.
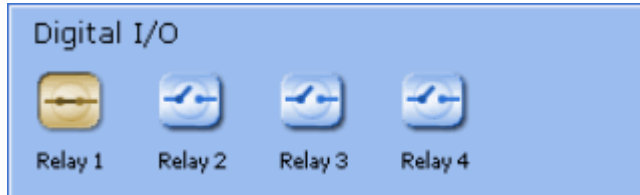
Figure 8.13   Digital I/O Panel

System and Event Logs

The System Log field contains information about the operating status of the IP AutoDome and the connection. The Event Log contains information about alarm conditions (see *Figure 8.14* below).
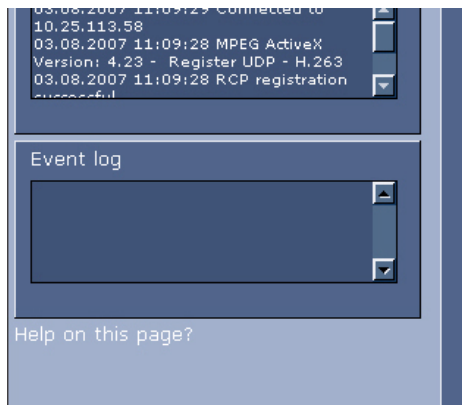
Figure 8.14   System and Event Logs

8.7.4   Entering a Keyboard Control Command

The Aux Control tab is used to enter keyboard control commands. These commands are composed of a command number plus the appropriate function key (Show Shot, Set Shot Aux On or Aux Off). A valid combination either issues a command to the camera or displays an on-screen menu.

Aux Control Tab

The Aux Control tab is used to enter pre-programmed keyboard control commands. See *Section 6 Keyboard Commands by Number, Page 37*, for a list of all commands. To access the Aux Control tab, navigate to the Livepage and click the Aux Control tab (see *Figure 8.15* below).

ⓘ **NOTICE!** The Aux Control tab can also be used to display the OSD menus. Once the OSD menus are displayed, the virtual joystick in the View Control tab can be used to navigate the menus, and the Focus and Iris buttons can be used to make menu selections.
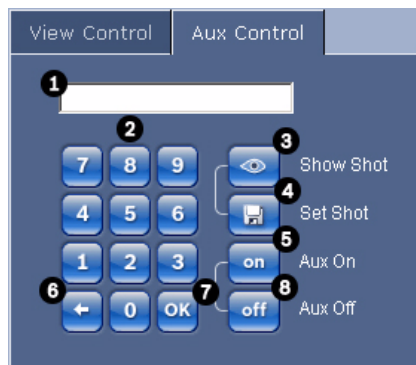
Figure 8.15   Aux Control Tab

Number	Description
1	Command number field
2	Keypad (numbers 0-9)
3	Show a preset shot
4	Set a preset shot
5	Initiates a command
6	Deletes a number in the Command Number field
7	Used to select a menu item
8	Stops a command

To Enter a Keyboard Control Command:

1. Place the cursor in the Command Number field.
2. Click the desired command number via the on-screen keypad.
3. Click either the Aux On or the Aux Off button to initiate or stop the command. See *Section 6 Keyboard Commands by Number, Page 37*, for a list of commands.
4. If the command initiates a menu, use the Up/Down arrows on the View Control to navigate the menu. Click the Focus or Iris button to select a menu item.

To Set a Preset Shot:

Preset shots (or scenes) are camera positions that are saved in memory for future use.

1. Move your cursor over the live image and wait for the area to display a directional arrow (↙↗↖↘↑↓→←).
2. Click and hold a mouse button to pan to the desired position you want to save.
3. Click any number combination from 1-99 (1-64 for a 200 Series AutoDome, 90-99 for 500i Series AutoDome are used for motion detection) from the on-screen keypad to identify the scene number.
4. Click the Set Shot button. The image area displays a message that indicates which shot number was saved.

To View a Preset Shot:
1. Click the number of the scene you want to view using the on-screen keypad.
2. Click the Show Shot button.

> ⓘ **NOTICE!** For more information about the IP AutoDome settings and controls, click the **Help on this page?** link to open the IP AutoDome online help.

8.8 Alarm Connections

The Alarm Connections screen allows users to specify up to ten IP addresses which the device attempts to establish a connection with in the event of an alarm. The device contacts the first specified IP address and then each subsequent address until the device establishes a connection.
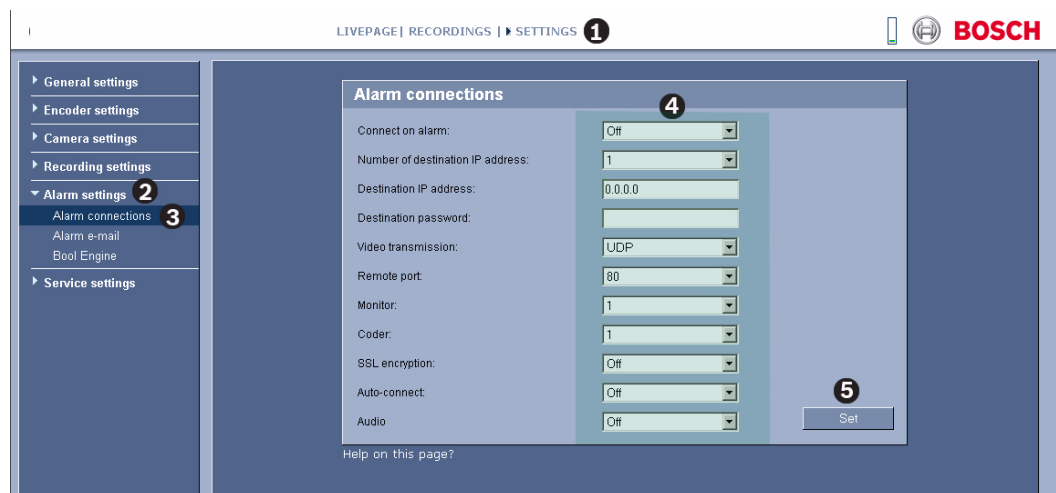
Figure 8.16 Alarm Connections

To connect an alarm, do the following:
1. Open the IP AutoDome Livepage, then click the Settings tab.
2. Click the Alarm Settings link, then click Alarm Connections. The IP AutoDome displays the Alarm Connections screen (see *Figure 8.16*).
3. Click the Connect on Alarm drop-down list and select On to establish a connection to a pre-defined IP address in the event of an alarm. Off, indicates no alarm connections are made and Follows Input x, triggers an alarm.
4. Click the Number of destination IP address drop-down list and select a number from one to ten to specify the number of the IP addresses. To configure multiple IP addresses, select a number for the destination IP address, configure the settings described below and then click the Set button. You must click the Set button prior to configuring the settings for another IP address.
5. Click inside the Destination IP address input box and type an IP address.
6. Click inside the Destination password input box and type the appropriate password for the IP address, if required.
7. Click the Video transmission pull-down list and make a selection.
8. Click the Remote port pull-down list and make a selection. Depending on the network configuration, select a browser port here. The ports for HTTPS connections will be available only if the **On** option is selected for the **SSL encryption** parameter.
9. Click the Monitor pull-down list and make a selection from one to four.
10. Click the Coder pull-down list and make a selection from one to four.

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11. Click the SSL encryption pull-down list and make a selection. The data for the connection, for example the password, can be securely transmitted with SSL encryption. If you have selected the **On** option, only encrypted ports are offered in the **Remote port** parameter.
12. Click the Audio-connect pull-down list and select On if an active connection should be reestablished automatically to one of the specified IP addresses after each restart.
13. Click the Audio pull-down list and select the **On** option to additionally transmit a standalone G.711-encoded audio stream with alarm connections.

8.8.1   Sending an Alarm E-mail

The device can be configured to send an e-mail when an alarm has been triggered. You can send a JPEG image taken from the camera or you can send a pre-defined Short Message Service (SMS) text message. If you activate this feature, the device sends the e-mail message to the specified e-mail server when an alarm is triggered. To configure for Alarm e-mails, do the following:

1. Open the IP AutoDome Livepage, then click the Settings tab.
2. Click the Alarm Settings link, then click Alarm e-mail. The IP AutoDome displays the Alarm e-mail screen.

Figure 8.17   Sending an Alarm E-mail

3. Select On from the Send alarm e-mail drop-down list to automatically send an e-mail in the event of an alarm.
4. Type the IP address for the e-mail server that receives the e-mail from the device and then transfers the e-mail to the recipient within the Mail Server IP address field.
5. Type the SMTP Username and SMTP Password necessary to access the e-mail server.
6. Select one of the following options from the Layout drop-down list:
   – Standard (with JPEG): Sends an e-mail that contains a JPEG image from the video stream.
   – SMS (max. 160 char.): Sends a text-only e-mail message to a mobile phone.
7. Check the box to attach a JPEG image from the camera from the video stream, with the e-mail.
8. Type the address that receives the alarm-activated e-mail message within the Destination address field.
9. Type a unique name within the Sender Name field to identify the unit that sends the e-mail. This parameter makes it easier to identify the origin of the e-mail. When finished, click Set to save all settings.
10. To test the e-mail function, click the **Send Now** button.

8.9   Partitioning

Partitioning can be set for recording images from the cameras connected to the AutoDome; this technique is similar to the partitioning often found on computer hard drives. Before setting a partition, you must chose a Storage Medium by going to the Setting page and clicking on the Recording Settings button. Parameters such as size and type of video recording can be specified for each partition. Modifying these parameters leads to reorganization, which results in the loss of stored data.

The unit requires a dedicated partition for the recordings of each connected camera. Each partition is linked to its own encoder or camera input: camera input **Video In 1** with partition number **01**, camera input **Video In 2** with partition **02**, etc. This assignment cannot be modified. As a result, all numbers are always displayed in the list, regardless of whether a corresponding partition is available or has been deleted. All four potential partitions need to be configured in order to record four cameras.

The partitioning page lists all partitions in the table together with the number of the video input (**Camera**), their partition name, alarm tracks, type and size.

In addition, the page provides you with an overview of the drive data; for example total memory and number of partitions created. A pie chart indicates how much memory space is partitioned for recordings.
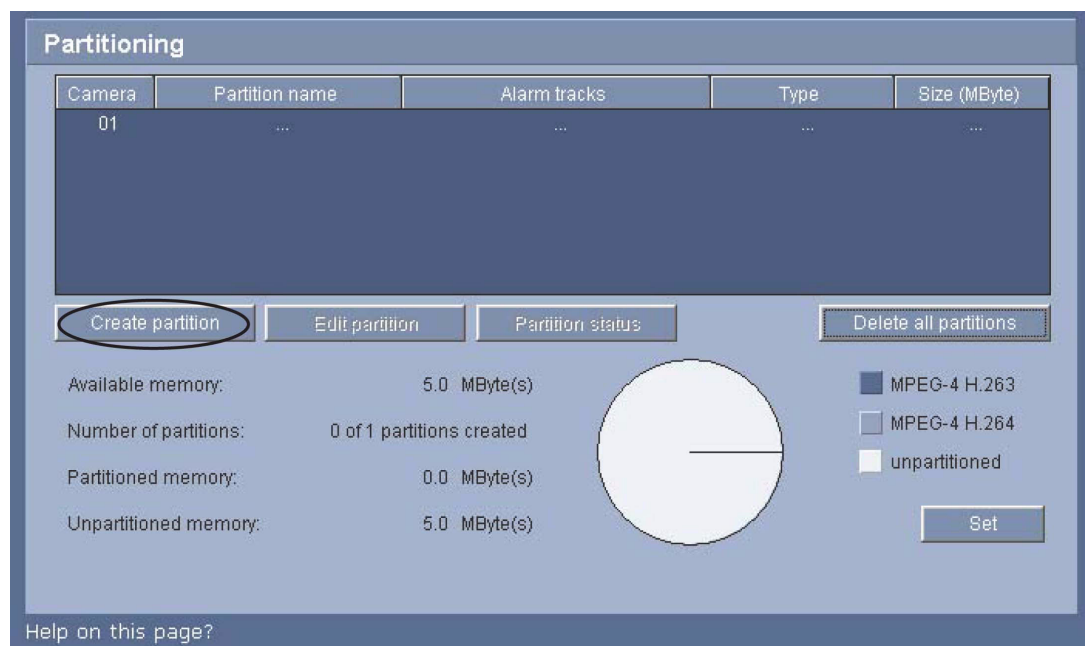
Figure 8.18   Partitioning

NOTICE!
The maximum number of partitions is predefined and corresponds to the number of video inputs on the unit.

The process must be completed for each partition to be set up on the hard drive. After startup, you can select the total number of partitions to be set up. The setup process is then started as often as is necessary to configure all partitions. To create a partition, do the following:

1.   Open the IP AutoDome Livepage, then click the Settings tab.
2.   Click the Recording Settings link, then click Partitioning. The IP AutoDome displays the Partitioning screen (see *Figure 8.18* above).

3.   Click the Create partition button. The IP AutoDome displays the Create new partition screen. Click the pull-down list for Number of new partitions and select a number, then click Next.

(i)   **NOTICE!** The Recording Scheduler must be stopped before creating a partition.
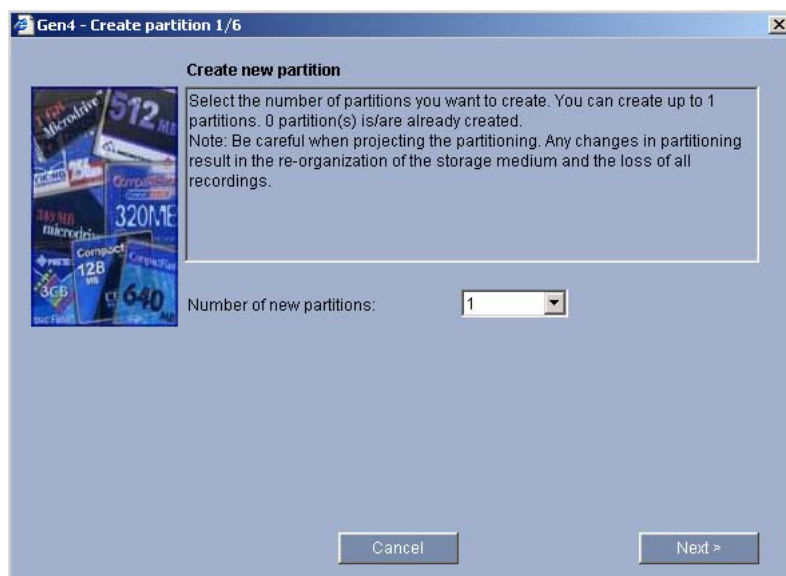
Figure 8.19   Identifying the Number of Partitions

4.   Type a unique name within the Partition name field, then click Next.
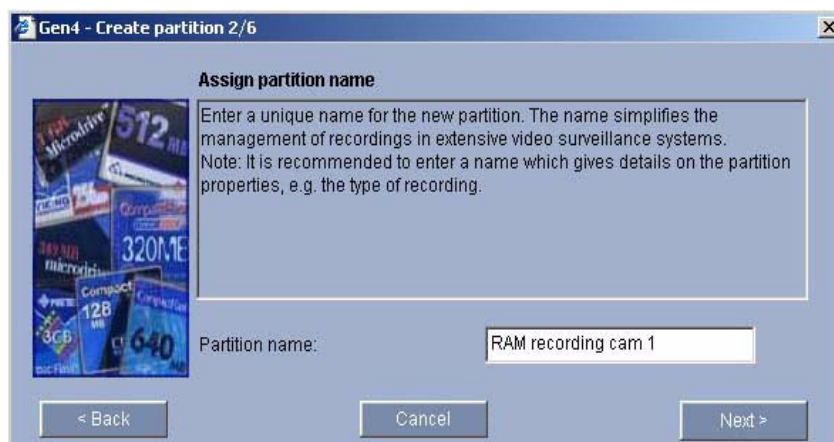
Figure 8.20   Assigning a Partition Name

5. Click the pull-down list for Recording format and make a selection, then click Next.
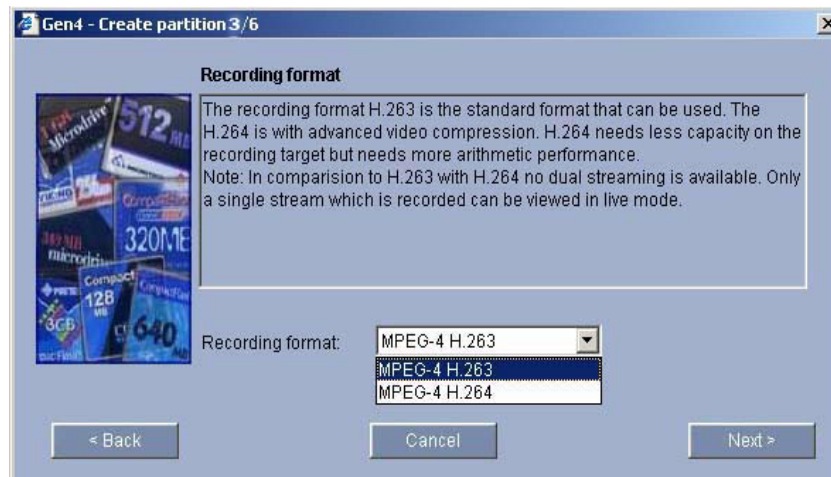
Figure 8.21 Identifying a Recording Format

6. Click the pull-down list for the Number of alarm tracks, then click Calculate. The IP AutoDome displays the Calculation of alarm track size screen.
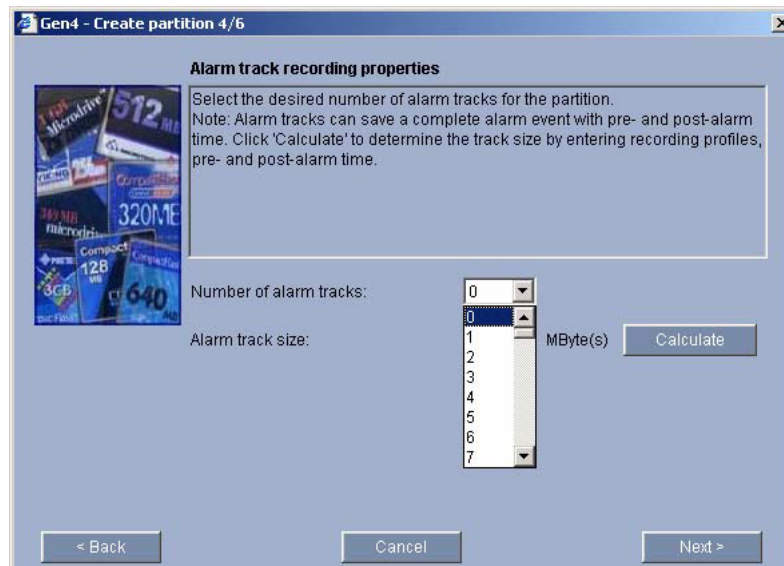
Figure 8.22 Alarm Track Recording Properties

7. Select a value for the Pre-alarm profile, the Pre-alarm time, the Post-alarm profile, and the Post-alarm time. Then, click Set to save your settings.
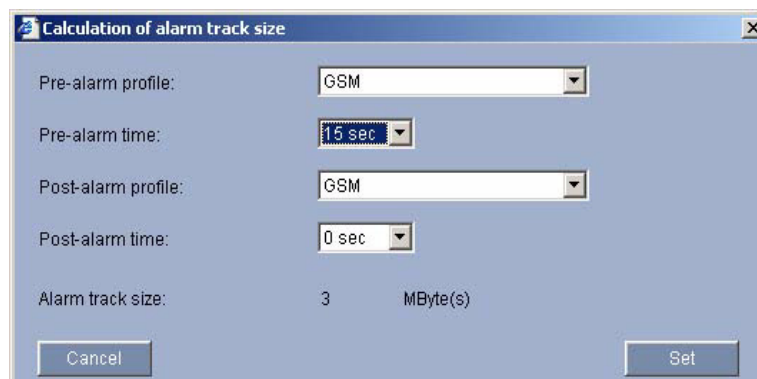
Figure 8.23 Calculation of Alarm Track Size

8. Click the pull-down list for the Type of recording and select the required recording style. Then, click Next. Types of recording:

    –   Ring mode: the recording proceeds continuously. If the maximum hard drive space has been reached, the oldest recordings are overwritten automatically.

    –   Linear mode: the recording proceeds until the entire hard drive space is full. The recording is then stopped until old recordings have been deleted.
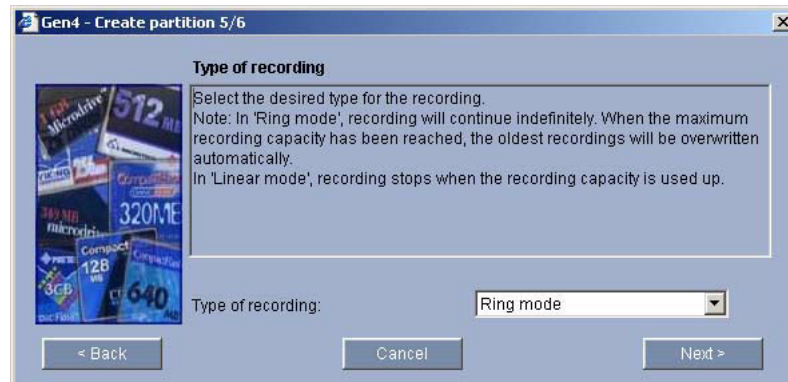
Figure 8.24   Type of Recording

9. Select one of the following methods to specify the partition size:
    Type the Total partition size; then click Finish. The IP AutoDome returns you to the Partitioning screen.
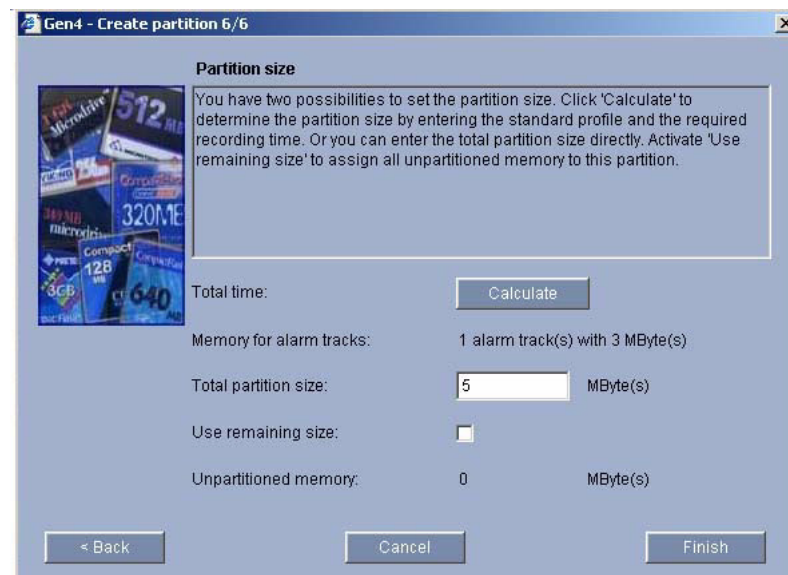
Figure 8.25   Partitioning Size

– or Click the Calculate button.
The IP AutoDome displays Calculation of partition size screen.
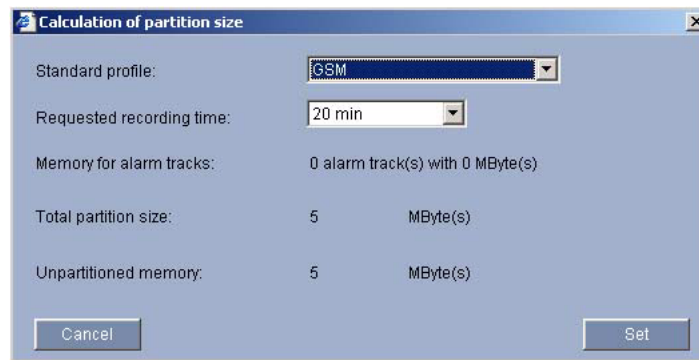
Figure 8.26   Calculating Partition Size

– Click the drop-down list to select the Standard profile, then click the drop-down list to select the Requested recording time. Click Finish to complete the configuration. All settings are now transferred to the unit and subsequently become effective. The IP AutoDome returns you to the Partitioning screen.

8.9.1   Viewing the Partition Status

The Partition status window provides an overview of the current partition configuration, however, no changes can be made here. To view the Partition status, do the following:

1.   Open the IP AutoDome Livepage, then click the Settings tab.
2.   Click the Recording Settings link, then click Partitioning.
3.   Click the camera that you would like to view.
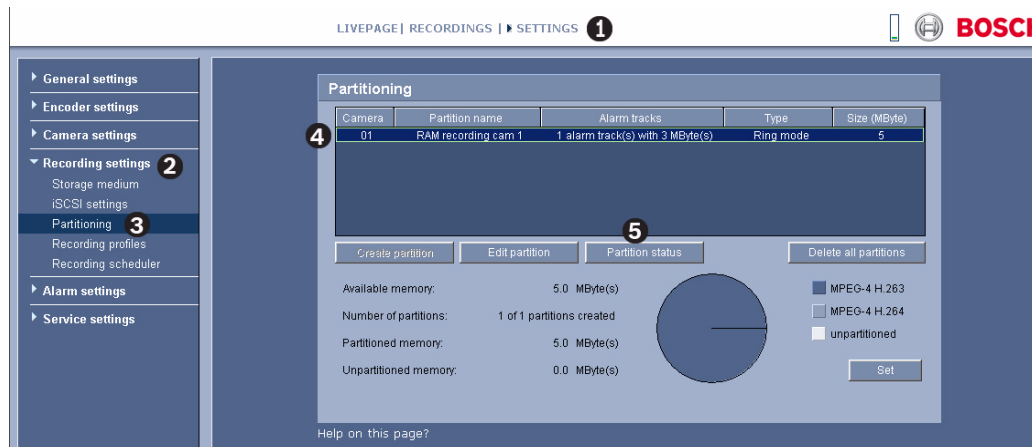
Figure 8.27   Viewing a Partition

4.   Click the Partition status button. The IP AutoDome displays the Partition status screen.
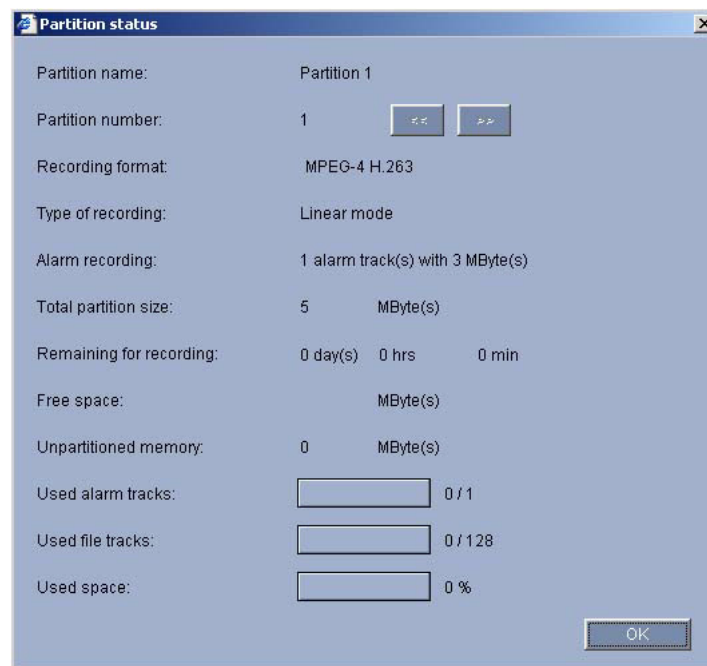
Figure 8.28   Partition Status

5.   To view other partitions, click the **<<** and **>>** buttons.
6.   Click **OK** to close the window.

8.9.2 Editing a Partition

The **Edit partition** window provides an overview of the current partition configuration, which can be modified at any time. All modifications result in the reorganization of the partition and all sequences stored are lost. It is recommended to back up all important sequences before modifying the partition.

The unit uses a special recording mode during alarm recording for optimal usage of storage capacity: as soon as a time gap for alarm recording begins, a recording is continuously made on one segment, which is the size of a complete alarm sequence (pre- and post-alarm time). This segment in the partition functions in a similar manner to a ring buffer and is overwritten until an alarm is actually triggered. Recording occurs on the segment only for the duration of the preset post-alarm time and a new segment is subsequently used in the same manner.

To edit a partition, do the following:

1. Open the IP AutoDome Livepage, then click the Settings tab.
2. Click the Recording Settings link, then, click Partitioning. The IP AutoDome displays the Partitioning screen (see *Figure 8.18*).
3. Click the Edit partition button. The IP AutoDome displays the Partition properties screen.

Figure 8.29 Partition Properties

4. Click the **<<** and **>>** buttons to edit a partition. Make any desired changes, then click the **Format** button to save the modifications.
5. Click the Recording format drop-down list and select a recording format.
6. Click the Type of recording drop-down list and select the number of alarm tracks to be used in the partition. One alarm event can be recorded in each alarm track, and the number of alarms entered can be recorded and archived. A partition can contain a maximum of 128 alarm recordings.

CAUTION!
Alarm tracks must be set up in the required partition for alarm recording.

7. Click the **Set** button when finished.

8.9.3   Deleting Recordings

You can delete all recordings in a partition at any time.

⚠ **CAUTION!**
Check the recordings before deleting and back up important sequences on the computer's hard drive.

▶   Click the **Format!** button to delete all recordings in the selected partition.

8.9.4   Deleting all Partitions

You can delete all partitions at any time. Individual partitions cannot be deleted.

⚠ **CAUTION!**
Deleting partitions causes a reorganization of the entire hard drive and all sequences stored on it are therefore lost.
Consequently, you should check the recordings before deleting any partitions and back up important sequences on the computer's hard drive.

▶   Click the **Delete all partitions** button. The display retains the lines containing the numbers, the partition names are deleted and **0** is specified as the size in each case.

8.10   Recording Scheduler

The recording scheduler allows you to link the created recording profiles with the days and times at which the images of selected cameras are to be recorded in the event of an alarm. You can link any number of 15-minute intervals with the recording profiles for each day of the week. Moving the mouse cursor over the table displays the time below it, which aids orientation.

In addition to the normal weekdays, you can define holidays that are not in the standard weekly schedule on which recordings are to apply. This feature allows you to apply a schedule for Sundays to other days with dates that fall on varying weekdays.

Figure 8.30   Recording Scheduler

To edit the Recording Scheduler, do the following:
1.   Open the IP AutoDome Livepage, then click the Settings tab.
2.   Click the Recording Settings link, then click Recording Scheduler. The IP AutoDome displays the Recording Scheduler screen (see *Figure 8.30*).
3.   Click the profile you want to link in the **Time periods** field.
4.   Click in a field in the table, hold down the mouse button and drag the cursor over all the periods to assign the selected profile.
5.   Use the right mouse button to deselect any of the intervals.
6.   Click the **Select all** button to link all time intervals to the selected profile.
7.   Click the **Clear all** button to deselect all of the intervals.
8.   Click the **Set** button to save the settings in the unit, then click Start.

8.10.1   Holidays

You can define holidays that are not in the standard weekly schedule on which recordings are to apply. This feature allows you to apply a schedule for Sundays to other days with dates that fall on varying weekdays.
1.   Click the **Holidays** tab (see *Figure 8.30*). Any days that have already been selected will be shown in the table.
2.   Click the **Add** button, the IP AutoDome displays the Add holiday screen.

Figure 8.31   Adding a Holiday

3.   Select the desired date from the calendar. To select several consecutive calendar days, click and drag the mouse over the days. The Recording scheduler displays these days as a single entry in the table.
4.   Click **OK** to accept the selection. The IP AutoDome closes the window.
5.   Assign the individual holidays to the recording profiles, as described in *Figure 8.32*.

8.10.2   Deleting Holidays

To delete holidays which have been defined by yourself, do the following:
1.   Click the **Delete** button. The Recording scheduler opens a new window.
2.   Click the date you would like to delete.
3.   Click **OK** to delete the item from the table. The IP AutoDome closes the window.
4.   Repeat this process for deleting additional days.

8.10.3   Time Periods

To change the names of the recording profiles, do the following:
1.   Click a profile, and then the **Rename** button.
2.   Enter your chosen name and click the **Rename** button again.

8.10.4   Activating the Recording

After completing configuration, you must activate the recording scheduler and start the recording. Once recording is underway, the **Recording profile** and **Recording scheduler** pages are deactivated and the configuration cannot be modified.

To stop the recording activity at any time to modify the settings, do the following:

1. Click the **Start** button to activate the recording scheduler.
2. Click the **Stop** button to deactivate the recording scheduler. This action interrupts current recording to modify the configuration.

8.10.5   Recording Status

The Recording status indicator at the bottom of the screen indicates the recording activity of the IP AutoDome. For example, an animated graphic is displayed while recording is taking place.

8.11   Recording Profiles

You can define up to ten recording profiles to use with the Recording scheduler, which are linked with individual days and times (see *Section 8.10 Recording Scheduler, Page 71*). In each profile, different settings for each camera input can be configured.
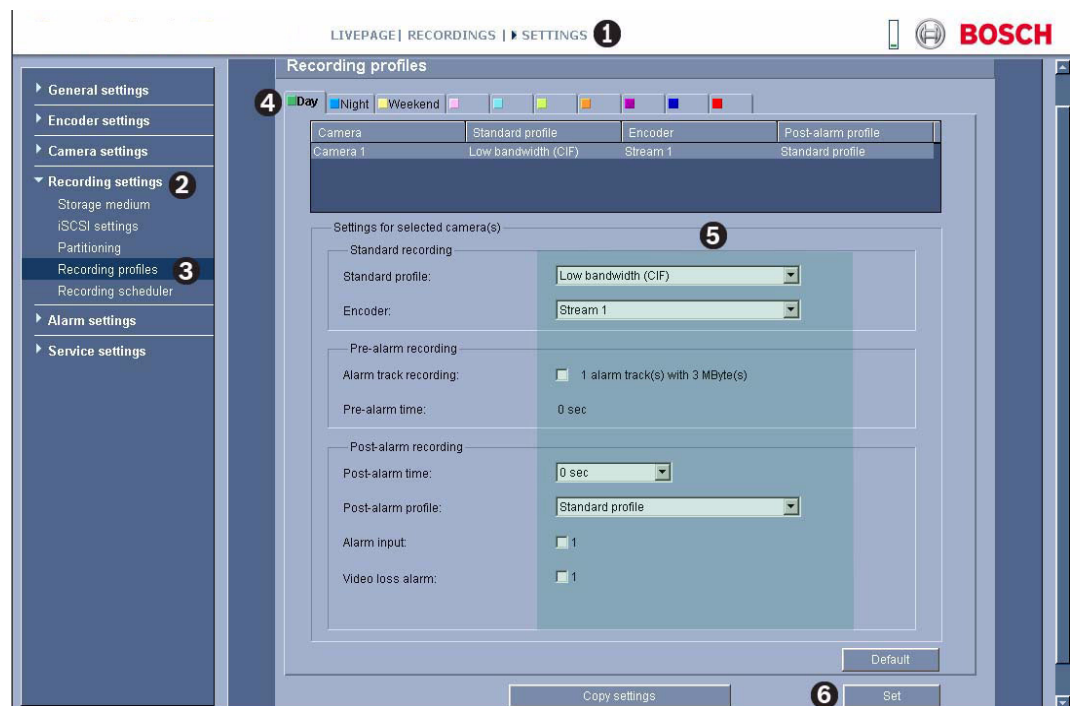
Figure 8.32   Recording Profiles

NOTICE!

You can change or add to the recording profile description on the tabs on the **Recording scheduler** page (see *Section 8.10.3 Time Periods, Page 72*).

To edit the Recording Profile, do the following:

1. Open the IP AutoDome Livepage, then click the Settings tab.
2. Click the Recording Settings link, then click Recording Profiles. The IP AutoDome displays the Recording Profiles screen (see *Figure 8.32* above).
3. Click the name of the camera input to edit the settings. To select multiple camera inputs, hold down the shift or [Ctrl] key.
4. Click the Standard Profile drop-down list and select the encoder profile to be used for continuous recording. The recording profile can deviate from the standard setting **Active profile** for the video input set and is only used during an active recording.
5. Click the Encoder drop-down list and select the data stream to be used for recording.
6. Click the checkbox to activate alarm track recording. The pre-alarm time is displayed automatically for information. This parameter is only active if alarm tracks have been configured for the selected camera input, or the corresponding partition.
7. Click the Post-alarm drop-down list and select the required time from the list.
8. Click the Post-alarm drop-down list and select the encoder profile to be used for recording. The **Standard profile** option adopts the selection for continuous recordings at the top of the page.
9. Click the Alarm input checkbox and the Video loss checkbox to activate these features.
10. Click the **Default** button to return all settings to the default, if appropriate.
11. Click the **Copy settings** button to copy the currently visible settings to other profiles. The IP AutoDome opens a new Copy settings window, then select the profiles to copy the settings.
12. Click the **Set** button to save the settings for each profile.

8.12   Alarm Rules

The 300 and 500i Series AutoDome feature a powerful alarm rule engine. In its simplest form, an alarm rule can define which input(s) activate which output(s). Basically, an alarm rule allows you to customize an AutoDome to automatically respond to different alarm inputs.
In its more complex form, a rule can be programmed to take any combination of input(s) and keyboard command(s) to perform a dome function. There are numerous combinations of alarm inputs and outputs that can be programmed into 12 alarm rules.

8.12.1   Creating Alarm Rules

Up to four (4) input and output events can be included in a single rule. However, each input and output must be true for the alarm's rule to be valid and enabled. To configure an alarm rule, do the following:

1.   Open the IP AutoDome Livepage, then click the Settings tab.
2.   Click Alarm from the left pane, then click Alarm Rules. Select an Alarm Rule. The IP AutoDome displays the Alarm Rule screen.
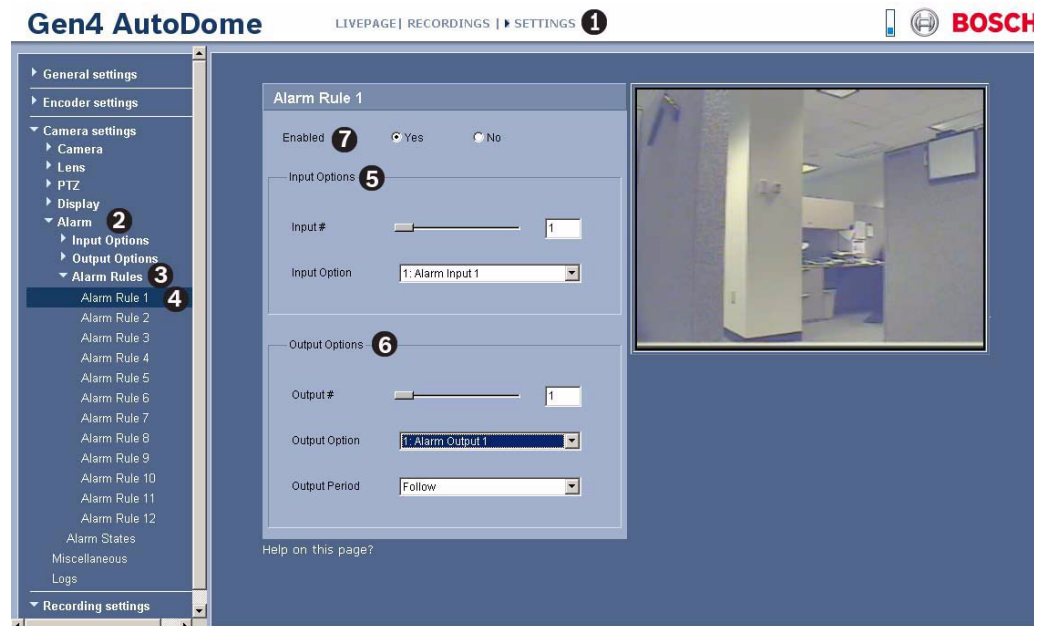
Figure 8.33   Alarm Rules

3.   Move the slider bar to select a number between 1-4, inclusive.
4.   Select the appropriate Input Option. This list displays Input Options 1 through 7 only if these options were previously configured.
5.   Move the slider bar to select a number between 1-4, inclusive.
6.   Select the appropriate Output Option:
     –   None
     –   Output Options 1-3 (only if these options were previously configured).
     –   Alarm Relay (Output Option 4)
     –   OSD (on-screen display)
     –   Transmit
7.   Select an Output Period:
     –   Follow: activates the alarm following the alarm rule.
     –   Time Increment: activates the alarm following a predefined time increment.
     –   Latched: keeps the alarm active until it is acknowledged.
8.   Click the Yes radio button to enable the alarm.

8.12.2   Alarm Rule Examples

The following examples provide step-by-step instructions to configure alarm rules from the IP-based Web interface.

Basic Alarm Rule Example

The following is an example for setting up a basic door alarm rule to:

1.   Flash an OSD message (***ALARM 1***) on the display when the alarm is triggered.
2.   Move the AutoDome camera to a saved position (for this example use Shot 7).
3.   Transmit a Bilinx signal over the coax cable to the headend system, such as an Allegiant, to trigger an alarm response.

The sequence to program the above alarm rule is as follows:

1.   Open the IP AutoDome Livepage, then click the Settings tab.
2.   Click the **Camera Settings** link, click **Alarm**, expand **Input Options**, and click **Input Options 1**. The IP AutoDome displays the Input Options 1 screen (see *Figure 8.34* below).
     a.   Ensure the drop-down list for Type is set to Alarm Input 1.
     b.   Click the drop-down list for Alarm Input and set to **N.O.** (normally open). This setting is the default for Input 1. Additional inputs include:
     –   N.C. (Normally Closed, dry contact)
     –   N.C.S. (Normally Closed Supervised contact, available only for alarm inputs 1 and 2)
     –   N.C.O. (Normally Open Supervised contact, available only for alarm inputs 1 and 2)
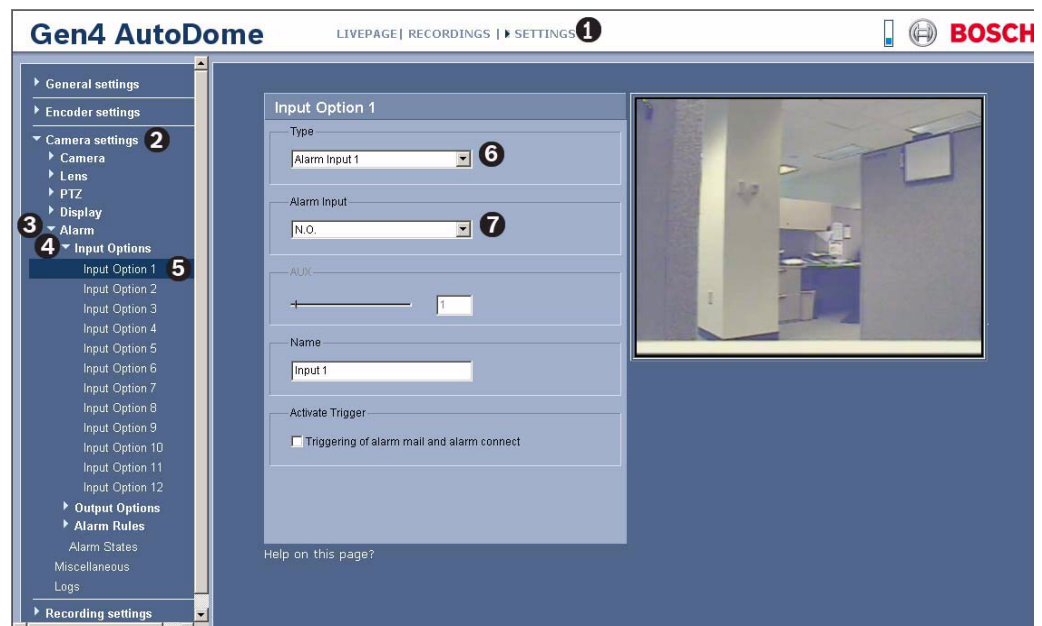
Figure 8.34   Input Options Settings Example

3. Close the Input Options list, then expand the **Output Options** list. Select **Output Option 5**.
    –   Ensure Output 5 is set to **OSD** (default setting for Output 5).
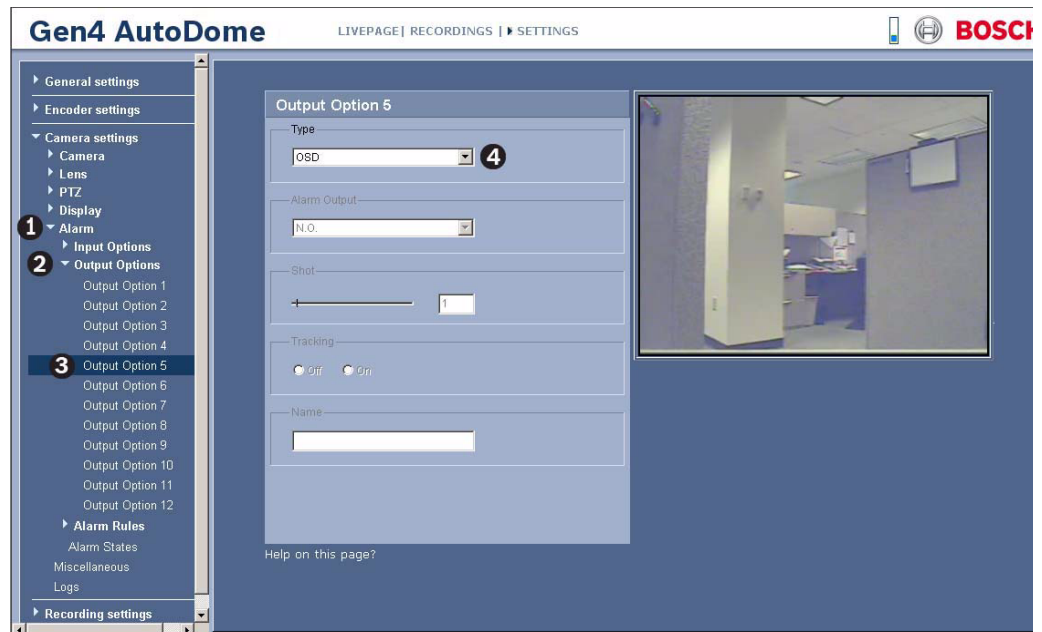
Figure 8.35 Output Option 5 Example

4. Select **Output Option 6** (see *Figure 8.36* below).
    a. Click the Type drop-down list and select **Shot**.
    b. Move the slider bar or type the number **7** in the Shot field.
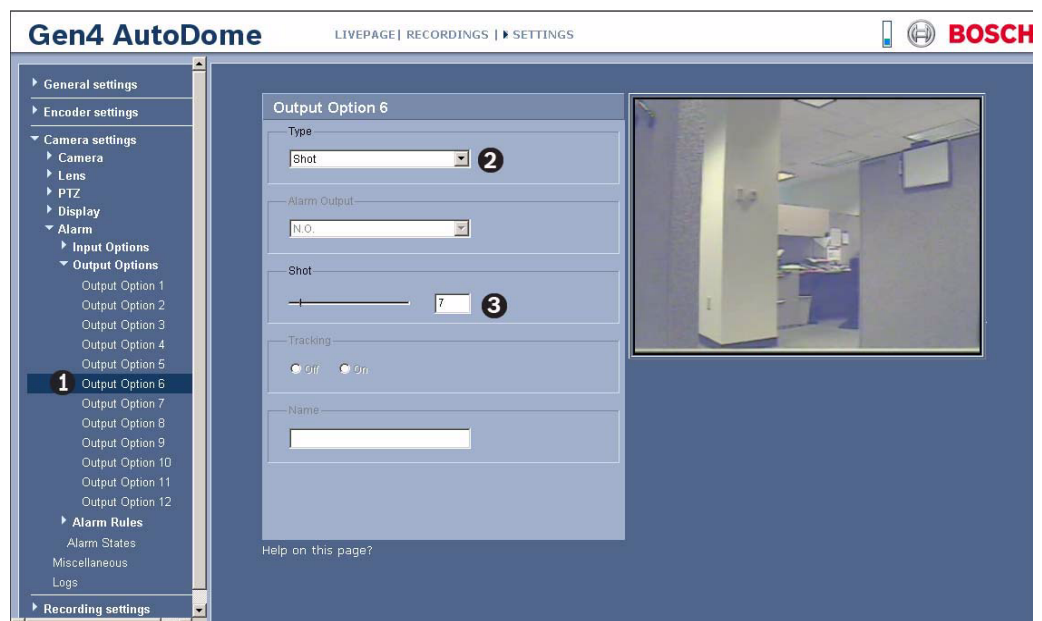
Figure 8.36 Output Option 6 Example

5. Select **Output Option 7**.
6. Click the Type drop-down list and select **Transmit**.
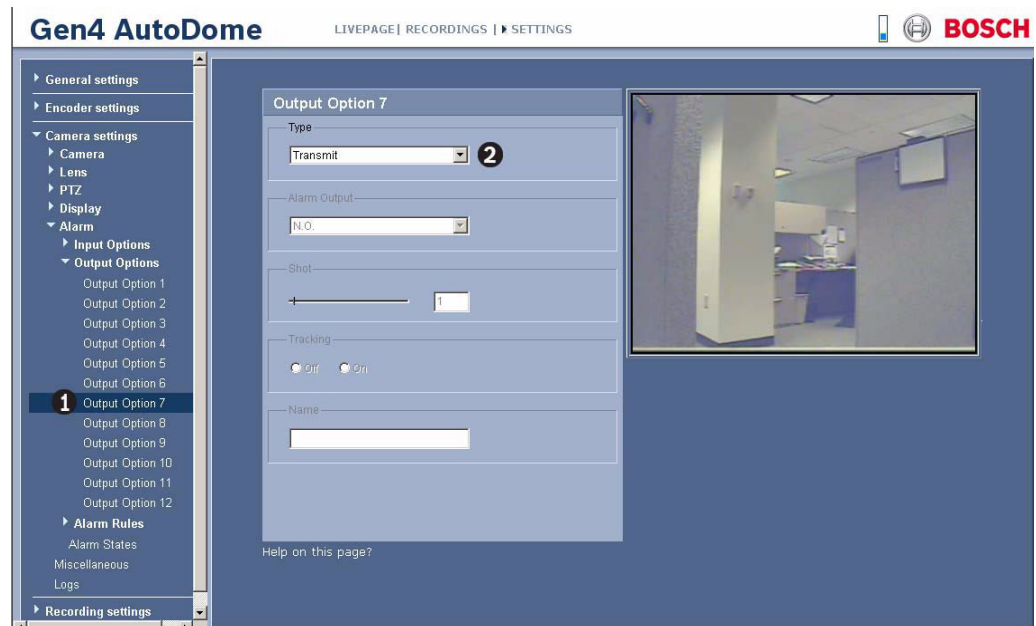
Figure 8.37   Output Option 7 Example

7. Close the Output Options list, click **Alarm Rules** and then click **Alarm Rule 1**.
   a. Move the slider bar or type the number **1** in the Input # field.
   b. Click the **Input Option** drop-down list and select **1: Alarm Input 1**.
   c. Move the slider bar or type the number **1** in the Output # field.
   d. Click the **Output Option** drop-down list and select **5: OSD**.
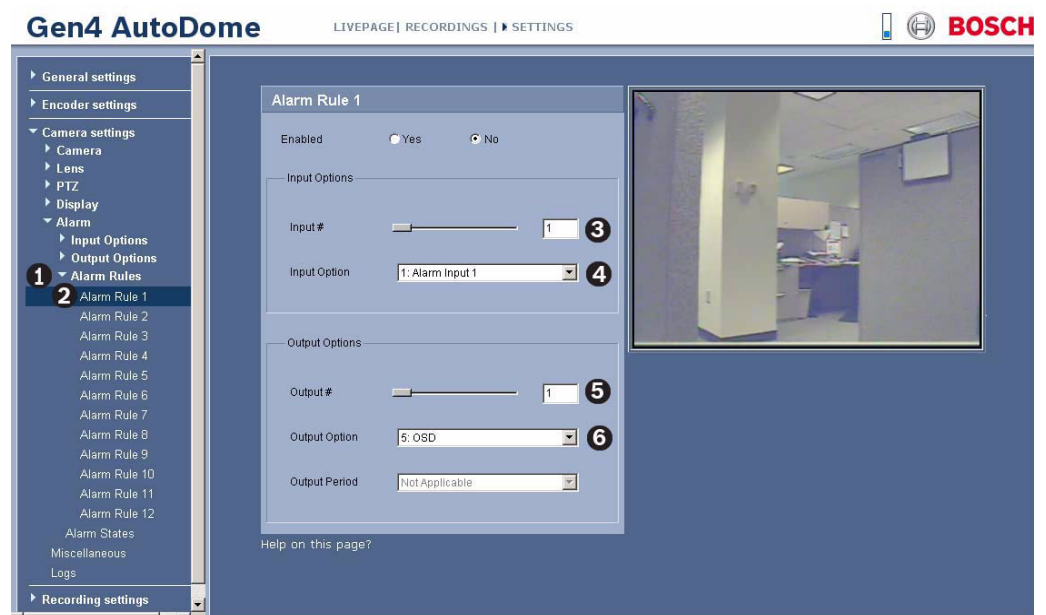
Figure 8.38   Alarm Rule 1 Example

8. Within the Output Options, do the following:
    a. Move the slider bar or type the number **1** in the Output # field.
    b. Click the Output Option drop-down list and select **5: OSD**.
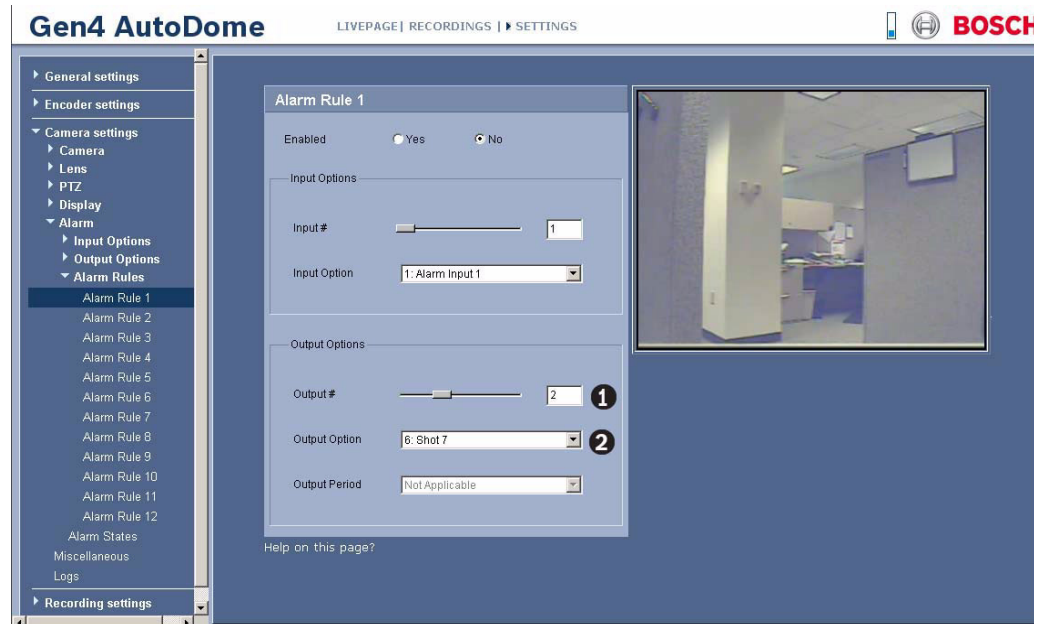
Figure 8.39   Alarm Rule 1 Example

9. Within the Output Options, do the following:
    a. Move the slider bar or type the number **3** in the Output # field.
    b. Click the **Output Option** drop-down list and select **7: Transmit**.
    c. Click the **Output Period** drop-down list and select **3 sec**.
    d. Click the **Yes** radio button to enable Alarm Rule 1.
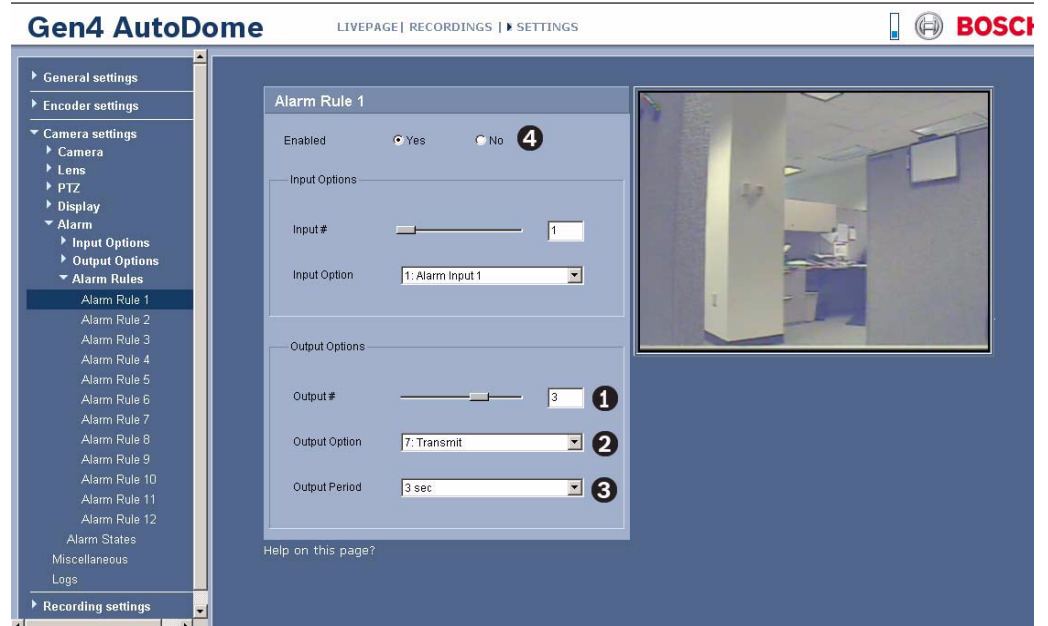
Figure 8.40   Alarm Rule 1 Example

Advanced Alarm Rule Example using AutoTrack

This example explains how to set an alarm rule that moves the camera to a preset position and then activates the AutoTrack feature to track an intruder after an alarm is triggered.

1. Open the IP AutoDome Livepage, then click the Settings tab.
2. Click the **Camera Settings** link, click **Alarm**, then click **Output Options**.
3. Click **Output Option 5** under the Output Options group.
4. Select **Tracking** from the Type drop-down list.
5. Click **Output Option 6**.
6. Select **Shot** from the Type drop-down list.
7. Type the number **1** or use the slide bar to specify shot number **1**. (Shot numbers must be set prior to configuring an alarm rule. See *Section 8.7.3 Controlling Camera Operations, Page 59*, for instructions).
    The AutoDome moves to this preposition when the alarm rule is true.
8. Click **Alarm Rule** link and then click **Alarm Rule 1**.
9. Click the **Yes** radio button to enable the rule.
10. Use the slider bar to select **1** for the Input option.
11. Select **Alarm Input 1** from the Input Option drop-down list.
12. Ensure that the Output number is set to **1**.
13. Select **6: Shot 1** from the Output Options drop-down list.
    This option instructs the AutoDome to move to pre-position shot 1 when Input 1 is true.
14. Move the Output slider bar to output **2**.
15. Select **5:Tracking** from the Output Option drop-down list.
    This option instructs the AutoDome to activate the AutoTrack feature after the input alarm is triggered and after the AutoDome moves to pre-position 1.
16. Select **5 sec** from the Output Period drop-down list.
    This option instructs the AutoDome to turn off the AutoTrack feature after five seconds from when the tracked object is out of view.

9 VG4 Audio Connections

The audio version of the VG4 AutoDome has one audio input for line signals. The audio signals are transmitted one-way and in-sync with the video signals. As a result, a door intercom system can be connected at the camera location.

ⓘ **NOTICE!** The line ports of the intercom should be used for transmitting audio signals on the intercom systems.

9.1 Audio Line Input Specifications

The following Line In specifications should be complied with in all cases:
– 5.5 Vpp max. Input voltage Impedance 9 Kohm, typical
– Sampling rate 8 KHz, 16 Bit, mono

ⓘ **NOTICE!** There is an internal gain level adjustment in case the signal level is too low.

9.1.1 Wire Specifications

Long distances are more susceptible to introducing noise into the signal.

Wire Type: Coax wire, AWG is dependant on the connector style selected
Maximum Distance: Depends on the signal level

9.1.2 Connections

The Audio Input must be connected to the Biphase Input as follows:
1. Remove the 110 ohm Biphase termination resistor.
2. Connect an audio source with line level to the Biphase input of the VG4 as shown in the chart below:

Contact	Description
Biphase +	Audio In
Biphase -	Ground

9.1.3 Activating Audio Reception

To configure audio via the Web browser, do the following:
1. Open the IP AutoDome LivePage, then click the Settings tab.
2. Click the Camera Settings link from the left pane, then click Miscellaneous. The IP AutoDome displays the Audio settings.
3. Click the Audio radio button to activate audio over IP.

ⓘ **NOTICE!** The audio signal is sent in a separate data stream parallel to the video data, and so increases the network load. The audio data is encoded according to G.711 and requires an additional bandwidth of approximately 80 Kbit/s for each connection.
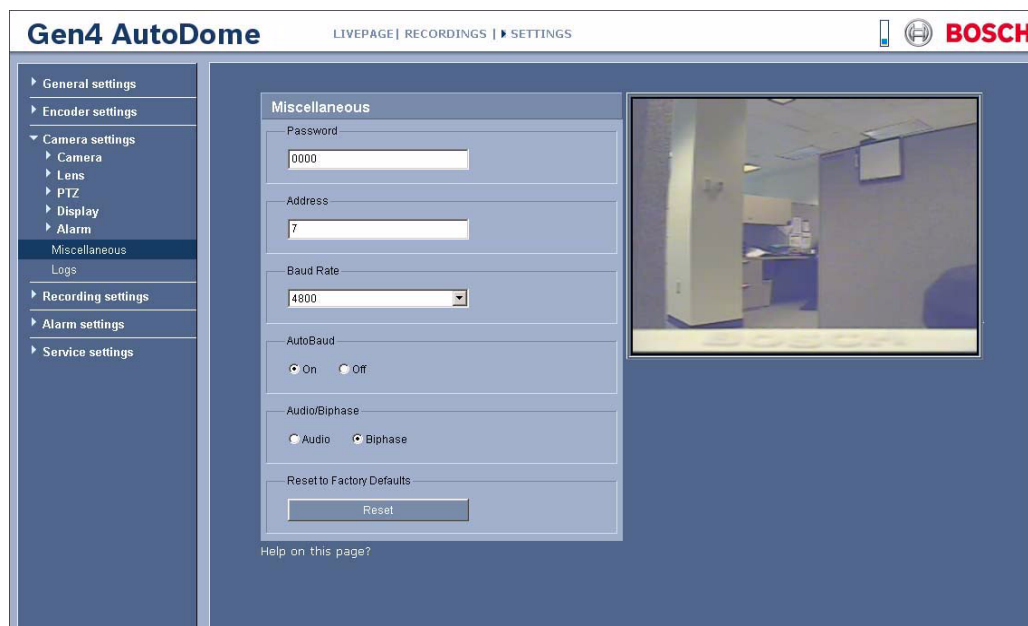
Figure 9.1   Configuring Audio Settings

9.1.4   Enabling Audio Transmission

To transmit audio via the IP connection, do the following:

1.   Open the IP AutoDome LivePage, then click the Settings tab.
2.   Click Service Settings from the left pane, then click Livepage Configuration. The IP AutoDome displays the Livepage Configuration screen (see *Figure 9.2*).
3.   Click the Transmit Audio radio button to enable for audio.
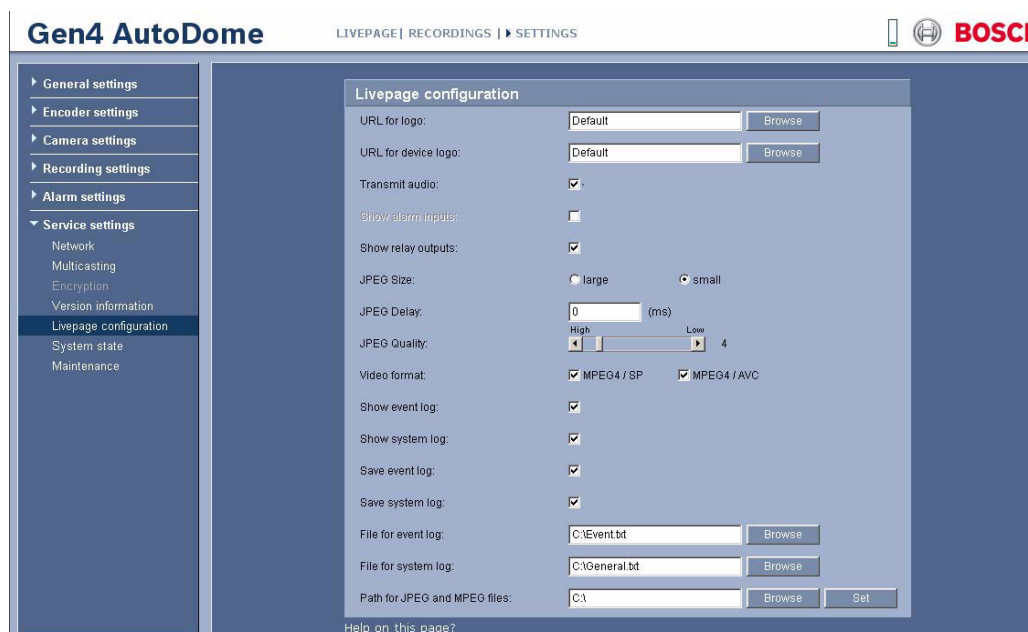
Figure 9.2   Livepage Configuration

9.1.5	**Configuring Gain (optional)**

Input gain control is supported over a range of -34B to +12dB. The current video image is shown in the small window next to the slide controls to help verify the audio source and improve the Peak levels. Set the gain of the audio signals to suit your specific requirements. Changes are effective immediately.

The current level is displayed next to the slide control to help do this. Make sure that the display does not go beyond the green zone during modulation.

Figure 9.3   Setting Audio

10   Troubleshooting Guide

10.1   VG4 AutoDome Operation and Control

Problem	Solution
No video	– Check that the Green LED on the AutoDome CPU board is on. This LED indicates video from the camera. **If the Green LED is off, then:** – Check that the Red LED on the AutoDome CPU board is slowly blinking. This LED indicates power to the AutoDome power supply board and to the CPU Module. **Red LED on AutoDome CPU Module** **Flash SequenceIndicates:** – 5 sec. on / 0.5 sec. off: Normal operation – Steady on: CPU is locked **If the Red LED is on steady, then:** – Try cycling the AutoDome power off and on. **If the Red LED is off, then:** **If using a Bosch Pendant Power Supply Box:** – Check that Green LED in Power Supply Box is on. This LED indicates mains power through the transformer. **If the Green LED is off, then:** – Turn off the Power. – Check the FX101 fuse for mains power to the Power Supply Box. **If O.K., then:** – Check the FX102 fuse for 24 V power to the AutoDome Pendant. **If O.K., then:** **If using a non-Bosch power supply:** – Check that the mains power to the power supply box is on. **If O.K., then:** – Check that there is 24 V output from the transformer. – Check the connector on top of the AutoDome housing for bent pins. **If O.K., then:** – Check the integrity of all wires and terminal connections to the AutoDome. **If O.K., then:** **If there is power to the AutoDome, then:** – Remove the camera and CPU modules from the AutoDome housing and check that the Green LED on the housing power supply board is on. **If the Green LED is off, then:** – Check that the fuse on the housing power supply board is good. (Try replacing the unit, if an extra camera module is available.)

No camera control	– Ensure that the keyboard and monitor are set to the correct (same) camera number. **If O.K., then:** – Check that the camera address is properly set. Enter **ON**-**997**-**ENTER** to display the camera address. **If address is not set or is incorrect, then:** – Set the camera address using FastAddress (**ON**-**998**-**ENTER)**. **If O.K., then:** – Check that the Amber LED on the AutoDome CPU turns on when receiving pan/tilt commands from the controller keyboard. The Amber LED indicates control is being received. **Amber LED on AutoDome CPU Module** **Flash Sequence** – Off No incoming communications or no power – Solid for 2 seconds Receiving good data – Fast blinking Lost packet(s) **If amber LED does not light when given PTZ commands, then:** – Check if other cameras on the system can be controlled. If not, check the controller and wiring connections. **If O.K., then:** – Check that the RS-232/485 selector switch is properly set to the proper protocol. **If O.K., then:** – Ensure that all Biphase, Bilinx, or RS-232/485 wires are properly connected. See the AutoDome Modular Camera System Installation Manual. **If O.K., then:** – Check if you can access the AutoDome OSD menus (**ON**-**46**-**ENTER**). **If O.K., then:** – Confirm that the AutoDome passes homing (**SET**-**110**-**ENTER**). **If AutoDome fails homing, then:** – Contact Bosch Technical Support.
Intermittent camera control	– Check that only the last AutoDome in a daisy chain configuration is terminated with a 110 Ω resistor across the +/- biphase terminals. **If O.K., then:** – Check that the maximum wire distance has not been exceeded for the control protocol (the maximum distance for RS-232 is 50 feet). See the AutoDome Modular Camera System Installation Manual. **If O.K., then:** – Check that all wiring meets Bosch recommended standards and specifications. See the AutoDome Modular Camera System Installation Manual.
Camera moves when moving other cameras	– Check that the camera address is properly set (**ON**-**997**-**ENTER**). If the camera address is not set, the AutoDome responds to control commands to any camera on the system. **If camera address is not set, then:** – Invoke the **FastAddress Menu** to assign a camera address (**ON**-**998**-**ENTER**).
Cannot access user settings	– Enter the unlock command **OFF**-**90**-**ENTER**. This command may require a password. (Commands automatically lock in 30 minutes.)

Picture is dark	– Check that the Gain Control is set to **AUTO** (**ON**-**43**-**ENTER**).
	If O.K., then:
	– Check that the Auto Iris Level is set to the appropriate level (**ON**-**11**-**ENTER**).
	If O.K., then:
	– Check that the video coax is terminated with 75 Ω only at the head end. (Double termination causes dark video.)
	If O.K., then:
	– Go to the **Camera Setup Menu** and increase the Pre-Compensation setting. (This feature is available only on 300 and 500i non-IP Series AutoDomes).
	If O.K., then:
	– Check that the camera lens cover is removed.
	If O.K., then:
	– Check that the maximum coax distance has not been exceeded. See the AutoDome Modular Camera System Installation Manual.
	If O.K., then:
	– Restore all camera settings (**ON**-**40**-**ENTER**).
Colors are not correct	– Reset the White Balance to the appropriate selection (**ON**-**30**-**ENTER**).
	If O.K., then:
	– Go to the **Camera Setup Menu** and increase the Pre-Compensation setting. (This feature is available only on 300 and 500i non-IP Series AutoDomes).
	If O.K., then:
	– Check that the maximum coax distance has not been exceeded. See the AutoDome Modular Camera System Installation Manual.
	If O.K., then:
	– Restore the default settings (**ON**-**40**-**ENTER**).
Background is too bright to see subject	– Turn on backlight compensation (ON-20-ENTER).
Video is rolling, noisy or distorted	– Ensure that the Synch Mode is set to Internal (**OFF**-**42**-**ENTER**).
	If O.K., then:
	– Check that the maximum coax distance has not been exceeded. See the AutoDome Modular Camera System Installation Manual.
	If O.K., then:
	– Check the integrity of all BNC connectors and splices.
	Note: Connecting a network cable to the interface board of a non-IP AutoDome causes video distortion.
	– Remove the network cable from the interface board RJ-45 connector.
	If O.K., then:
	– Contact Bosch Technical Support.
Day/Night camera does not switch automatically when image is dark	– Check that the Day/Night mode is set to **AUTO** (**ON**-**56**-**ENTER**).
	If O.K., then:
	– Set Gain Control to AUTO (**ON**-**43**-**ENTER**).
Inside of EnviroDome bubble is foggy	– Check the status of the Heater Module (**ON**-**66**-**ENTER**).
	If status reports Heater No Power, then:
	– Turn off the power to the AutDome.
	– Check the FX103 fuse in the Power Supply Box for power (24 V) to the heater module.
	If O.K., then:
	– Check all wiring and connector pins to the heater module.

Low Voltage flashing on monitor display	– If using a non-Bosch power supply, confirm that it meets the Bosch AutoDome power ratings. See the AutoDome Datasheet for specifications. **If O.K., then:** – Check the mains input line voltage. **If O.K., then:** – Check that the maximum wire length from the power supply has not been exceeded. See the *AutoDome Modular Camera System Installation Manual*.

10.2   VG4 IP AutoDome Video and Control

Problem	Solution

No Network Connection	– Check all network connections
	  – Ensure that the maximum distance between any two Ethernet connections is 100 m (328 ft) or less.
	    Refer to the *AutoDome Modular Camera System Installation Manual* for more information.
	If O.K., then:
	– If you are behind a firewall, ensure that the Video Transmission mode is set to UDP.
	  a. Access the Settings Web page for the IP-enabled device.
	  b. Expand the Service Settings link, then click Network.
	  c. Select UDP from the Video Transmission drop-down list. Then click Set.

10.3   VG4 IP AutoDome Audio

The following diagrams illustrate the path for audio transmissions between a microphone/
AutoDome and a computer that plays the audio. The first diagram illustrates these
connections with an IP-enabled VG4 AutoDome and the second illustration uses an analog
(standard) VG4 AutoDome. Use the appropriate diagram to help troubleshoot any audio
issues.

Audio Connections with an IP-enabled VG4 AutoDome
The IP-enabled AutoDome uses an Ethernet connection to connect directly to an existing
network.
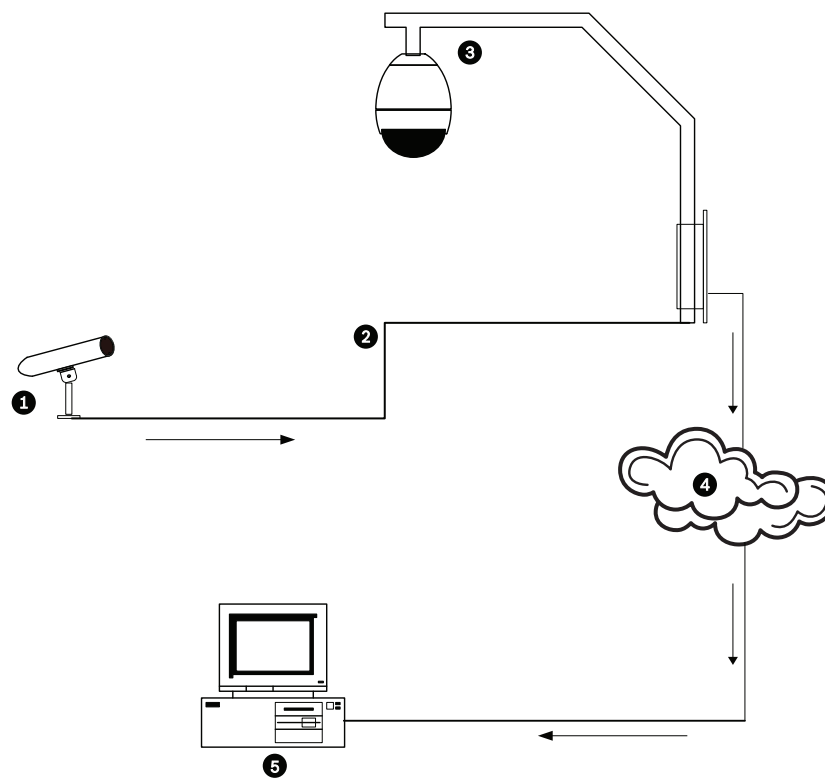
Figure 10.1   Typical Audio Connections for an IP-enabled AutoDome

1	Microphone
2	Coaxial Cable–10 m (33 ft) maximum distance
3	VG4 IP-enabled AutoDome
4	Ethernet Network
5	Computer with Bosch DiBos Software

Audio Connections with an Analog (standard) VG4 AutoDome

In this illustration the analog VG4 AutoDome connects to a Bosch Video/Audio IP Encoder via a coaxial cable. The computer that plays the audio is connected to the encoder via an Ethernet cable.
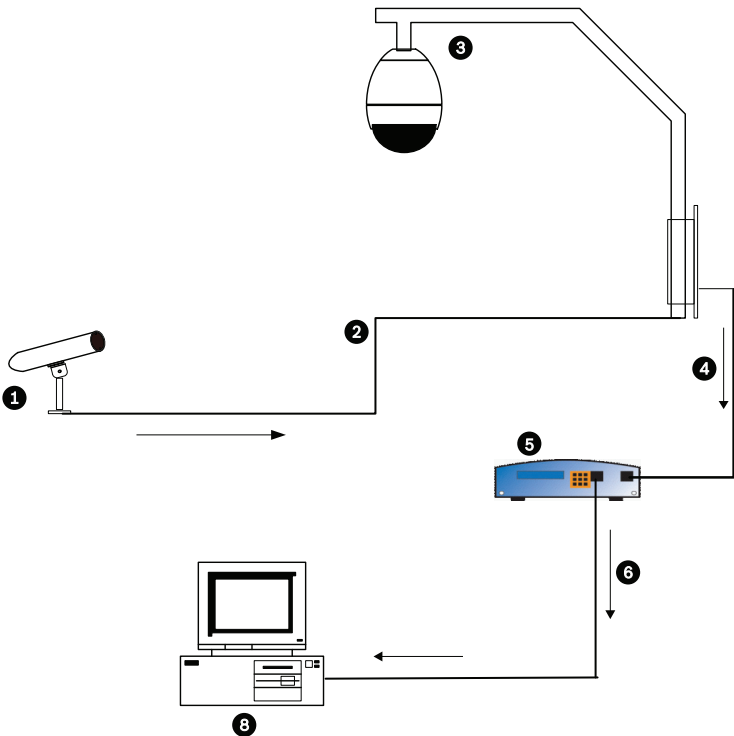
Figure 10.2   Typical Audio Connections for an Analog AutoDome

1	Microphone	5	Bosch Video/Audio Encoder
2	Coaxial Cable–10 m (33 ft) maximum distance	6	Ethernet Connection; Bosch Video/Audio Encoder to a PC
3	VG4 Analog (Standard) AutoDome	7	Computer with Bosch DiBos Software
4	Coaxial Connection; VG4 Analog Autodome to a Bosch Video/Audio Encoder		

Problem	Solution
No Audio	– Check the computer receiving the audio from the VG4 AutoDome or from the IP Encoder. – Check the computer's audio settings. Ensure that the sound levels are at an audible level. – Check the computer's audio output card and speakers. Play a secondary source of audio on the computer. If you still do not hear audio replace the speakers and try again.
	If O.K., then: – Ensure that the Audio option is enabled for the IP device. a. Access the Settings Web page for the IP-enabled device. b. Expand the Encoder Settings link, then click Audio Settings. c. Ensure that On is selected from the Enable Audio drop-down list. Then, click Set.
	If O.K., then: – Check the microphone. Connect appropriate speakers directly to the microphone at the camera site and confirm that the audio is clear and audible at the location. An audio problem or noise at the source will further degrade as it travels through all the cables and connections.
	If O.K., then: – Verify the cable type and installation used for audio connections between the microphone and the VG4 AutoDome. – Cable type: Coaxial – Cable length: 10 m (33 ft), maximum Refer to the *AutoDome Modular Camera System Installation Manual* for more information.

Problem	Solution
	If O.K., then: − Check all network connections. 　− If the video is clear and contains no distortion, then the network connections are probably not the source of audio problems. 　− Ensure that the maximum distance between any two Ethernet connections is 100 m (328 ft). 　　Refer to the *AutoDome Modular Camera System Installation Manual* for more information.
Poor Audio	− Check the computer receiving the audio from the VG4 AutoDome or from the IP Decoder. 　− Check the computer's audio output card and speakers. Play a secondary source of audio on the computer, if you hear static then replace the speakers and try again. 　− Check the computer's audio output card and speakers. Play a secondary source of audio on the computer. If you still do not hear audio replace the speakers and try again. **If O.K., then:** − Check the Gain settings and the peak gain value. 　a. Access the Settings Web page for the IP-enabled device. 　b. Expand the Encoder Settings link, then click Audio Settings. 　c. Adjust the Gain level so that the peak value stays within the green area. 　　Refer to the *AutoDome Modular Camera System Installation Manual* for complete information. **If O.K., then:** − Check the location of the microphone and the audio cables. 　− Line level audio is typically between 700 mV and 2 V so it may be affected by AC power or transmission sources. 　− Ensure that there is a maximum (at least 1 foot per 100 VAC) distance between the microphone and audio cables and the AC source. **If O.K., then:** − Verify the cable type and installation used for audio connections between the microphone and the VG4 AutoDome. 　− Cable type: Coaxial 　− Cable length: 10 m (33 ft), maximum 　　Refer to the *AutoDome Modular Camera System Installation Manual* for more information.

A User Command Table

Function Key	Comm No.	Command	Description	Series 200	Series 300	Serie s 500i
On/Off	1	Scan 360°	Autopan without limits	✓	✓	✓
On/Off	2	Autopan	Autopan between limits	✓	✓	✓
On/Off	7	Play Custom Pre-position Tour	Activate/Deactivate		✓	✓
On/Off	8	Play Pre-position Tour	Activate/Deactivate	✓	✓	✓
On/Off	14	Set Autopan and Scan Speed	Enters speed adjustment slide bar	✓	✓	✓
On/Off	15	Set Pre-position Tour Period (dwell)	Enters dwell adjustment slide bar	✓	✓	✓
On/Off	20	Backlight Comp	Backlight Compensation	✓	✓	✓
On/Off	24	Stabilization	Electronic Stabilization			✓
On/Off	26	Wide Dynamic Range (WDR camera only)	Activate/Deactivate		✓	✓
On	47	View Factory Settings	View all menu default settings	✓	✓	✓
On/Off	50	Playback A, continuous	Activate/Deactivate		✓	✓
On/Off	51	Playback A, single	Activate/Deactivate		✓	✓
On/Off	52	Playback B, continuous	Activate/Deactivate		✓	✓
On/Off	53	Playback B, single	Activate/Deactivate		✓	✓
On/Off	56	Night Mode menu	On, Off, Auto (Day/Night only)	✓	✓	✓
On/Off	57	Night Mode setting	Enables/Disables Night Mode (Day/Night only)	✓	✓	✓
On	62	Pre-position Title menu	Enters Pre-position Title menu	✓	✓	✓
On	64	Alarm Status	Enters Alarm Status menu		✓	✓
Off	65	Alarm Acknowledge	Acknowledge alarm or deactivate physical outputs		✓	✓
On	66	Display software version	Displays software version number	✓	✓	✓
On	72	Re-initialize camera	Performs camera/lens re-initialization functions	✓	✓	✓
On/Off	78	AutoTrack	Turns AutoTrack on or off			✓
On/Off	81	Physical output 1	On–activates output Off–deactivates output		✓	✓
On/Off	82	Physical Output 2	On–activates output Off–deactivates output		✓	✓
On/Off	83	Physical Output 3	On–activates output Off–deactivates output		✓	✓
On/Off	90	Command Lock/Unlock	On–lock on Off–lock off	✓	✓	✓
On/Off	100	Record A	Activate/Deactivate		✓	✓
On/Off	101	Record B	Activate/Deactivate		✓	✓
On	997	FastAddress, display	Display current address	✓	✓	✓

Function Key	Comm No.	Command	Description	Series 200	Series 300	Serie s 500i
On	998	FastAddress, all units	Display and program current address	✓	✓	✓
On	999	FastAddress, unaddressed domes	Display and program unaddressed AutoDomes	✓	✓	✓
Set	"1-99"	Pre-position programming	Set ##–programs a preset view	"1-64"	✓	✓
Shot	"1-99"	Pre-position recall	Shot ##–recall programmed preset	"1-64"	✓	✓
Set	100	Pre-position menu	Enters the Pre-position menu	✓	✓	✓
Set/Shot	101	Autopan left limit	Set–programs left limit Shot–shows limit	✓	✓	✓
Set/Shot	102	Autopan right limit	Set–programs right limit Shot–shows limit	✓	✓	✓
Set	110	Factory P/T home position	Set–recalibrate home position	✓	✓	✓
Set	900	Edit Tour 1 (Standard)	Enters the Standard Tour Scene menu	✓	✓	✓
Shot	900	Edit Tour 2 (Custom)	Enters the Custom Tour Scene menu		✓	✓
Set/Shot	901-999	Adds/Removes a preposition shot from Tour 1	Set ###–adds preset Shot ###–removes preset	901-964	✓	✓

Glossary of CCTV Terms

A

Address	Each AutoDome has a numerical address in the control system in which it is located. This allows the appropriate dome to be operated. The address may be set locally using the Bilinx Configuration Tool for Imaging Devices (CTFID) or remotely using the Fast Address function (see Fast Address).
AAC	See Advanced Alarm Control.
Advanced Alarm Control	
	AutoDome's flexible and sophisticated alarm management subsystem that allows "rules" to be created that define which input(s) activate one or more outputs (see Alarm Rule). In its most basic form, a rule could define which input(s) should activate which output(s). In a more complex form, a rule can be programmed to take a specific keyboard command (pre-existing or not) and perform a dome function, or any combination of the above.
Advanced Diagnostics	
	Bosch's combination of built-in On Screen Displays (OSD) and status LEDs that are used to check critical camera parameters such as internal temperature, input voltage levels, and network connectivity. This allows a technician to quickly determine the source of problems and ensure that the dome is functioning within correct operating limits.
AGC	See Automatic Gain Control.
Aperture	The size of the opening in the iris, which controls the amount of light that reaches the CCD Sensor. The larger the F-Stop numbers, the less light reaches the sensor.
AutoBlack	A technique of boosting the video signal level to produce a full amplitude video signal even when the scene contrast is less than full range (glare, fog, mist, etc.). The darkest part of the signal is set to black and the lightest part to white, thus increasing the contrast.
AutoDome	Fully integrated, high speed, pan/tilt/zoom camera built into a protective dome housing allowing full and continuous 360° coverage of the scene.
AutoFocus	The lens continuously adjusts to the correct focus automatically for the sharpest picture.
AutoIris	The lens iris opening is automatically adjusted to allow the correct illumination of the camera sensor.
Automatic Gain Control	
	The electronics that regulate the gain or amplification of the video signal.
AutoPan	The camera pans continuously between right and left limit settings.
AutoPivot	As the camera tilts through the vertical position, the camera is rotated to maintain the correct orientation of the image.
AutoPlayback	This function records the sequence of movements of the AutoDome PTZ for later playback allowing a set pattern to be repeated automatically. This function is often called Guard Tour.
AutoScaling	As the camera zooms in to increase the size of objects on the monitor screen, the pan and tilt speeds are reduced so that the relative speed on the screen remains constant for similar joystick control positions.
AutoTrack	A patented technology that integrates motion detection into the camera allowing tracking of an object and zooming in to optimize size and perspective.

Auto White Balance	A feature that allows a color camera to automatically adjust its output color to give a natural color independent of the lighting used.
AWB	See Auto White Balance.

B

Back Light Compensation	Selectively amplifies parts of the image to compensate for large contrast differences when only a portion of the image is brightly lit (e.g. a person in a sunlit doorway).
Balun	Short for Balance/Unbalanced. A device that converts a balanced video signal (e.g. as used on twisted pair) line to an unbalanced signal (e.g. as used on coax). In a balanced line, such as twisted pair, both wires are electrically equal. In an unbalanced line such as coax, one line has different electrical properties than the other.
Bilinx	A communications format that allows remote control, configuration and updates to be performed over the video cable (Coax or Passive UTP).
Biphase	Pan/Tilt/Zoom protocol for Bosch products.
BLC	See Back Light Compensation.

C

Cable Category	Application and bandwidth rating system for UTP cabling. Categories 1 through 6 are based on EIA/TIA-568-B standards. Category is typically abbreviated CAT. UTP Category 5, 5e, and 6 are used for Ethernet data cabling applications. Ethernet wiring distances are limited to a maximum of 100m (328ft.) when using UTP wiring.
Cable Compensation	A technology that prevents image degradation caused by signal losses when transmitting video over long cable lengths.
CCD	See Charged Coupled Device.
CCD Format	Indicates the size of the camera sensor used. In general, the larger the sensor, the more sensitive the camera and the better the image quality. The format is quoted in inches, for example 1/4" or 1/3". See Charge Coupled Device (CCD).
CCTV	See Closed Circuit TeleVision.
Charge Coupled Device	The most common type of solid state image sensor used in CCTV cameras. The sensor converts light energy into electrical signals.
Closed Circuit TeleVision	A video system that transmits television signals over a closed (non-broadcast) system.
Color Temperature	A measure of the relative color of illumination. Most generally used to specify the automatic correction range of a color camera.
Configuration Tool for Imaging Devices	Bosch software used to configure and update cameras and other remote devices over video cable using Bilinx, and to save them for later use.
CTFID	See Configuration Tool for Imaging Devices.

D

Day/Night (IR sensitive)	
	An AutoDome that has normal color operation in situations where there is sufficient illumination (day conditions), but where the sensitivity can be increased when there is little light available (night conditions). This is achieved by removing the infrared cut filter required for good color rendition. The sensitivity can be further enhanced by integrating a number of frames to increase the signal to the noise ratio of the camera.
Default Shutter	This feature allows the shutter speed to be set to a fast speed to eliminate motion blur and providing detailed and clear image of fast-moving objects while there is sufficient light. When light levels fall and other adjustments have been exhausted, the shutter speed reverts to the standard setting to maintain sensitivity.
Digital Image Stabilization	
	See Image Stabilization.
DNR	See Dynamic Noise Reduction
Dynamic Noise Reduction	
	A digital video processing technique that measures the noise (image artifacts) in the picture and automatically reduces it.

E

Ethernet	The most commonly used local area network (LAN) access method. Ethernet complies with the IEEE 802.3 standard. The Ethernet standard supports 10 Mbps, 100 Mbps and 1000 Mbps (Gigabit) data transmission rates.
EnviroDome	AutoDome with environmental protection that allows it to be used outdoors in almost any climate.

F

Fast Address	A system for setting the address of the AutoDome remotely from the control system.
Fiber Optic Transmission	
	Refers to the transmission of video and/or data via optical fibers. Optical fibers are thin glass strands that are designed for light wave transmission. Video and data are digitized and transformed into a series of light pulses. The use of fiber optics for video and data transmission offers several advantages over sending electrical signals across copper wires. First, light pulses are not affected by random radiation in the environment, and thus their error rate is far lower. Fiber optics span far greater distances without need for repeaters or signal regenerators, and are far more secure as they are more difficult to tap and taps in the line can be detected. Optical fiber also provides enormous bandwidth with a single fiber capable of transmitting trillions of bits per second. There are two primary types of optical fiber; singlemode and multimode. Singlemode fiber is used when large distances must be spanned, typically greater than 2 Km/1.2 miles (see Singlemode). Multimode is typically used to span smaller distances such as the inside of buildings or on small campuses (see Multimode).
Field of View	The measure of the visible area within the camera's field of view. The larger the focal length, the smaller the field of view. The smaller the focal length, the wider the field of view.

Focal Length	The distance from the optical center of the lens to the image of an object located at an infinite distance from the lens. Long focal lengths give a small field of view (e.g. telephoto effect), while short focal lengths give a wide angle view.
F-Number	The standard measure of the lens aperture, which is the iris diameter, divided by the focal length of the lens. The lower the maximum aperture (or F-Number), the more light that passes through the lens.
F-Stop	See F-Number.

G

Gateway Address	A node on a network that serves as an entrance to another network.
Guard Tour	Allows recorded tours with a combined duration of 15 minutes. Recorded tours consist of control commands and can be played back as needed. All camera position information is stored for maximum flexibility (including pan, tilt, zoom, etc.).

H

Hybrid Streaming	The ability to simultaneously stream IP video across a local or wide area network, and CVBS video via coaxial or fiber optic cabling.

I

Image Stabilization	An algorithm that virtually eliminates camera shake in both the vertical and horizontal axes, resulting in exceptional image clarity.
Images per Second	A measurement of the rate that pictures are displayed to create a video stream. A rate of 25 IPS (PAL) or 30 IPS (NTSC) is generally considered to be full motion video.
Infrared Illumination	Electromagnetic radiation (light) with a longer wavelength than is visible to the naked eye. IR illumination is prominent at dusk and dawn and in incandescent lamps. IR illuminators come in the form of lamps with the appropriate filters, LEDs, or lasers. CCD sensors are less sensitive to IR than visible light, but IR can significantly increase the total illumination level, leading to a much better image at low light levels.
Institute of Radio Engineers	A measurement of video amplitude that divides the area from the bottom of sync to peak white level into 140 equal units. 140 IRE equals 1V peak to peak. The range of active video is 100 IRE.
Intermodal Dispersion	See Modal Dispersion.
IP 66	The IP code (Ingress Protection) indicates the degree of protection provided by enclosures for electrical equipment. The first number indicates protection of internal equipment against the ingress of solid foreign objects. The second number indicates protection of internal equipment against harmful ingress of water. Higher digits refer to higher levels of protection. See also NEMA rating.
IP Address	The address of a device attached to an IP network. Each device on an IP network must use a unique address. Every IP data packet contains a source address (sender) and a destination address (recipient). Each IP address consists of 32-bits that are arranged into four 8-bit "octets" (x.x.x.x). IP addresses range from 0.0.0.0 to 255.255.255.255.

IPS	See Images per Second.
IRE	See Institute of Radio Engineers.

L

Lux	The International (SI) unit of measurement of the intensity of light. It is equal to the illumination of a surface one meter away from a single candle.

M

MJPEG	Motion JPEG is a digital video encoding standard where each video frame is separately compressed into a JPEG image.
Modal Dispersion	A broadening of a waveform over long distances. Modal dispersion occurs in multimode fibers, because light is bounced down different reflective paths (e.g. modes) in the fiber. As the distance increases, the path (mode) begins to spread and the arrival time for the different light rays begins to vary. A large variance (dispersion) increases the chance that the optical receiver may interpret the incoming signals incorrectly. Modal dispersion is a major problem with multimode fibers.
MPEG-4	A digital video encoding and compression standard that uses interframe encoding to significantly reduce the size of the video stream being transmitted. With interframe coding, a video sequence is made up of keyframes that contain the entire image. In between the keyframes are delta frames, which are encoded with only the incremental differences. This often provides substantial compression because in many motion sequences, only a small percentage of the pixels are actually different from one frame to another.
Multimode Fiber	An optical fiber with a larger core (typically 50 or 62.5 microns) than singlemode fiber. The core can be made of plastic or glass fibers and it is the most commonly used fiber for short distances such as LANs. The name multimode comes from the fact that light rays travel down multiple reflective paths (modes) within the fiber. This allows light to enter the core at different angles, making it easier to connect to broader light sources such as LEDs (light emitting diodes). Fiber optic interfaces and multimode fiber-based transmission systems are less expensive than those based on singlemode fiber. However, the use of multiple reflective paths (modes) increases modal dispersion (see Modal Dispersion) and shortens the distances that this type of fiber optic transmission system can span.
Multi-Protocol	A protocol is a convention or standard that controls or enables the connection, communication, and data transfer between two devices. In PTZ cameras such as the AutoDome, protocol refers to the standard used to control the pan, tilt, and zoom (PTZ) operation of the camera. Since each dome camera manufacturer's PTZ protocols are unique, multi-protocol support is needed to support third party dome systems. AutoDome cameras support the Pelco "D" and "P" protocols and well as Bosch's own biphase protocol (See Biphase).

N

National Pipe Thread	
	A U.S. standard for tapered threads. NPT sizes measure the nominal inside diameter of the pipe. NPT threads form a seal as the threads compress against each other.
NEMA Rating	Specification standards in reference to the operating environment for a variety of electrical devices.
NightSense	A method of boosting the sensitivity of high-resolution Bosch color cameras by 9db (a factor of 3) by combining the signal of the color image in a single monochrome picture.
NPT	See National Pipe Thread.

O

On-screen Display	Menus are shown on the display monitor.
OSD	See On-screen Display.

P

Pan	Camera movement in the horizontal direction.
Pixel	The smallest addressable unit on a display screen or bitmapped image.
Pre-Position	A pre-selected and stored combination of pan, tilt and zoom positions that allow a set view to be recalled. Also known as Preset Shot.
Preset Tour	A sequence of preset shots combined to provide a pre-programmed tour of the area covered by an AutoDome camera.
Pressurized Dry Nitrogen Housing	
	A housing for outdoor applications that protects against smog, humidity, dirt and dust.
Privacy Masking	The ability to mask out a specific area to prevent it being viewed.

R

Region of Interest	The defining of a specific area within a field of view to be used by the motion detection algorithm to only look for motion within this region.
Resolution	The measure of the fine detail that can be seen in an image. For analog systems this is typically measured in Television Lines or TVL. The higher the TVL rating, the higher the resolution.
RS232/485	A communication interface for third party control and firmware upgrades to the AutoDome products.
Rule	AutoDome's alarm management subsystem that uses "if this, do that" rules to perform specific actions when an event occurs.

S

Sector Blanking	The ability to blank out video in any of the 16 pan sectors.
Sensitivity	A measure of the amount of light required to provide a standard video signal. Sensitivity values are stated in lux or foot-candles.
SensUp	Increases camera sensitivity by increasing the integration time on the CCD. This is accomplished by integrating the signal from a number of consecutive video frames to reduce signal noise.
Singlemode Fiber	An optical fiber with a silica (e.g. glass) core with a diameter of less than 10 microns. Used for high-speed transmission over long distances, it provides greater bandwidth than multimode, but its smaller core makes it more difficult to couple the light source. Singlemode fiber optic transmission systems use more expensive laser-based light sources.
Spot Focus	Activates Auto Focus for three seconds after camera movement.
Subnet Mask	Subnetting is a method that allows one large network to be broken down into several smaller ones. Depending on the network class (A, B, or C), some number of IP address bits are reserved for the network address (subnet) and some for the host address. For example, Class A addresses use 8 bits for the subnet address and 24 bits for the host portion of the address. Class A subnet masks are denoted 255.0.0.0. Class B addresses (16 bits for both the subnet and host address) use a 255.255.0.0 subnet mask. Class C addresses (8 bits for the subnet and 24 bits for the host address) use a subnet mask of 255.255.255.0.

T

TCP/IP	See Transmission Control Protocol/Internet Protocol.
Tilt	Camera movement in the vertical direction.
Transmission Control Protocol/Internet Protocol	A communications protocol suite that provides two data transport methods. TCP is a connection-based protocol that ensures that data arrives intact and complete. UDP is a connectionless, best effort protocol that simply sends out packets. UDP is typically used for streaming media, while TCP is used when error-free delivery is required.
Tri-streaming	A Bosch encoding technology that generates two separate MPEG-4 video streams and one MJPEG stream simultaneously. This advanced streaming capability enables the user to tune live viewing and recording requirements independently to meet specific site and enterprise requirements.

U

Unshielded Twisted Pair	A variant of twisted pair cabling UTP cable is not surrounded by any shielding. The wires in a twisted pair cable are twisted around each other to minimize interference from the other twisted pairs in the cable. UTP is the primary wire type for telephone usage and the most commonly used type of networking cable.
UTP	See Unshielded Twisted Pair.

V

Virtual Masking	A unique Bosch technology that allows for the creation of "invisible" motion masking areas. These invisible masks are similar to privacy zones, but only the AutoDome's AutoTrack II and Video Motion Detection algorithms can see them. This allows the AutoDome to ignore areas of unwanted motion.
Video Motion Detection	
	An algorithm for motion detection in which the camera compares the current image with a reference image and counts the number of pixels (see Pixel) that have changed between the two images. An alarm is generated when the number of pixel changes exceeds a user-configured threshold.
VMD	See Video Motion Detection.

X

XF-Dynamic	A highly accurate 15-bit digital signal processing technology from Bosch that extends the dynamic range of Dinion^{XF} cameras to optimally capture the detail in both the high and low light areas of the scene simultaneously, maximizing the information visible in the picture.

Z

Zoom	Changing the effective focal length to allow different fields of view to fill the picture area. Zoom can be optical, where the lens is adjusted, or digital, where a portion of the view selected is magnified electronically.

Index

Symbols

Numerics

A

B